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E. EARLE VAILE

Sheen Lodge, Richmond Park,
22^d May, 1886.

Dear von Haast,

With your many cares &
correspondences I am not surprised
that you put a letter into a wrong
envelope; in returning the inclosed.
I add the pleasure with which my
Sister & self look forward to welcome
you and Madame von Haast to
our abode tomorrow -

Always truly yours'

Richard Owen.

AUCKLAND INSTITUTE
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RESERVE OUTSIDE

MEMOIRS
ON THE
EXTINCT WINGLESS BIRDS OF NEW ZEALAND;
WITH AN APPENDIX
ON THOSE OF
ENGLAND, AUSTRALIA, NEWFOUNDLAND, MAURITIUS, AND RODRIGUEZ.

BY
RICHARD OWEN, C.B., F.R.S.
FOREIGN ASSOCIATE OF THE INSTITUTE OF FRANCE, ETC.

VOL. II. PLATES.

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1879.



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EXTINCT WINGLESS BIRDS OF NEW ZEALAND.

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¹ Pls. CVIII.-CXIII. are from photographs transmitted to me by Dr. von Haast, F.R.S., of skeletons in the Museum of Christ Church, Canterbury.

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GEOLOGICAL MAP OF NEW ZEALAND.

For impressions of this Map I am indebted to the Government Geological Survey of New Zealand. On it are noted most of the localities at which the remains described in this Work have been found.

Fig. 1.

Fig. 3.

Fig. 2.

Fig. 4.

Fig. 5.







Apterix australis

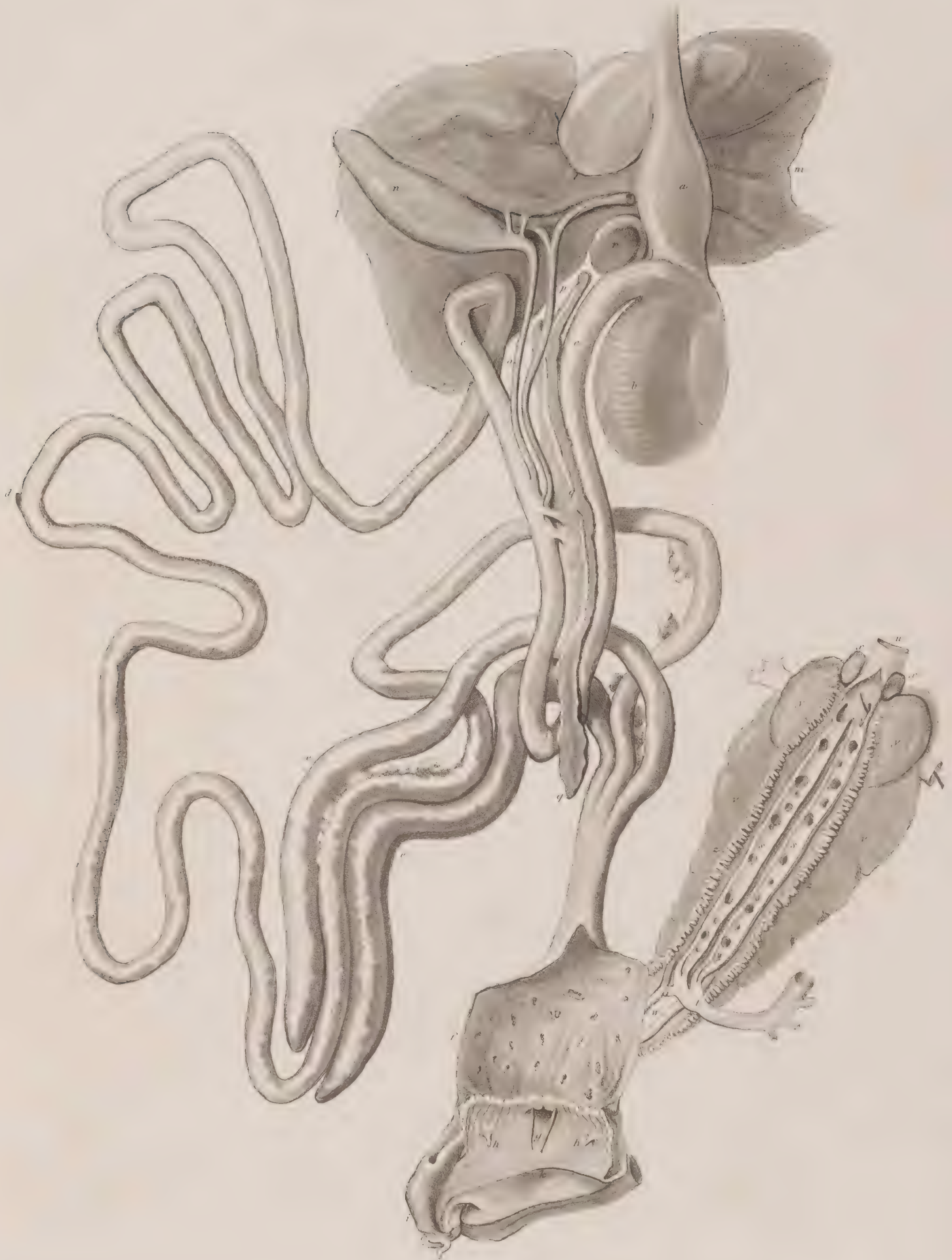
Fig. 3.

Fig. 2.

Fig. 1.









Apterix australis.



Fig. 1

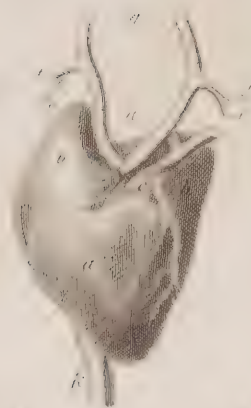


Fig. 2



Fig. 3



Apteryx australis

Plate VI

PLATE VII



Fig. 1, 2, 5, 8. *Apteryx*. . Fig. 3 & 4. *Ibis*.



Spermophaga australis, mas.

7/2 nat. size.

H. Scharf, del.

J. Swainson, sculp.





Apteroteuthis australis.





Apteryx Australis.
Scale of one the natural size.



Apterurus Australis.

Scale 1/2 - 1/4 - 1/8 natural size.



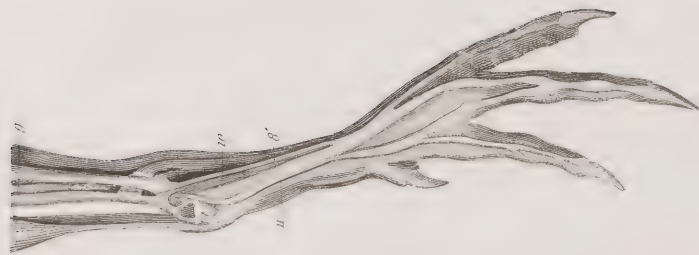
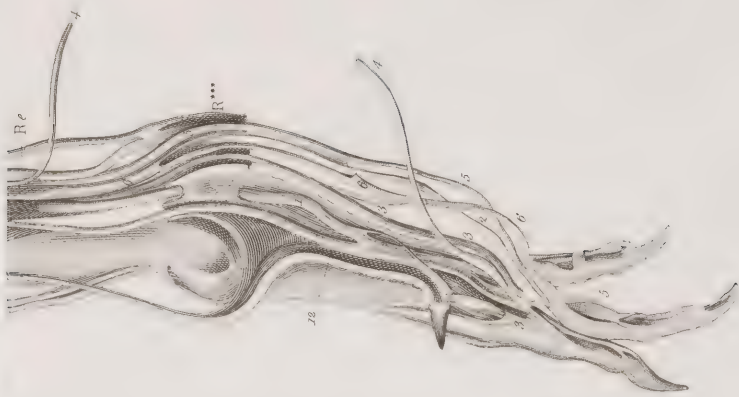
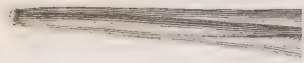
Apteryx Australis.

Scale $\frac{1}{4}$ the natural size.



Apteryx Australis.

Size $\frac{7}{8}$ the natural size.



R. O. & W. Scherf, del.

Apteryx Australis.

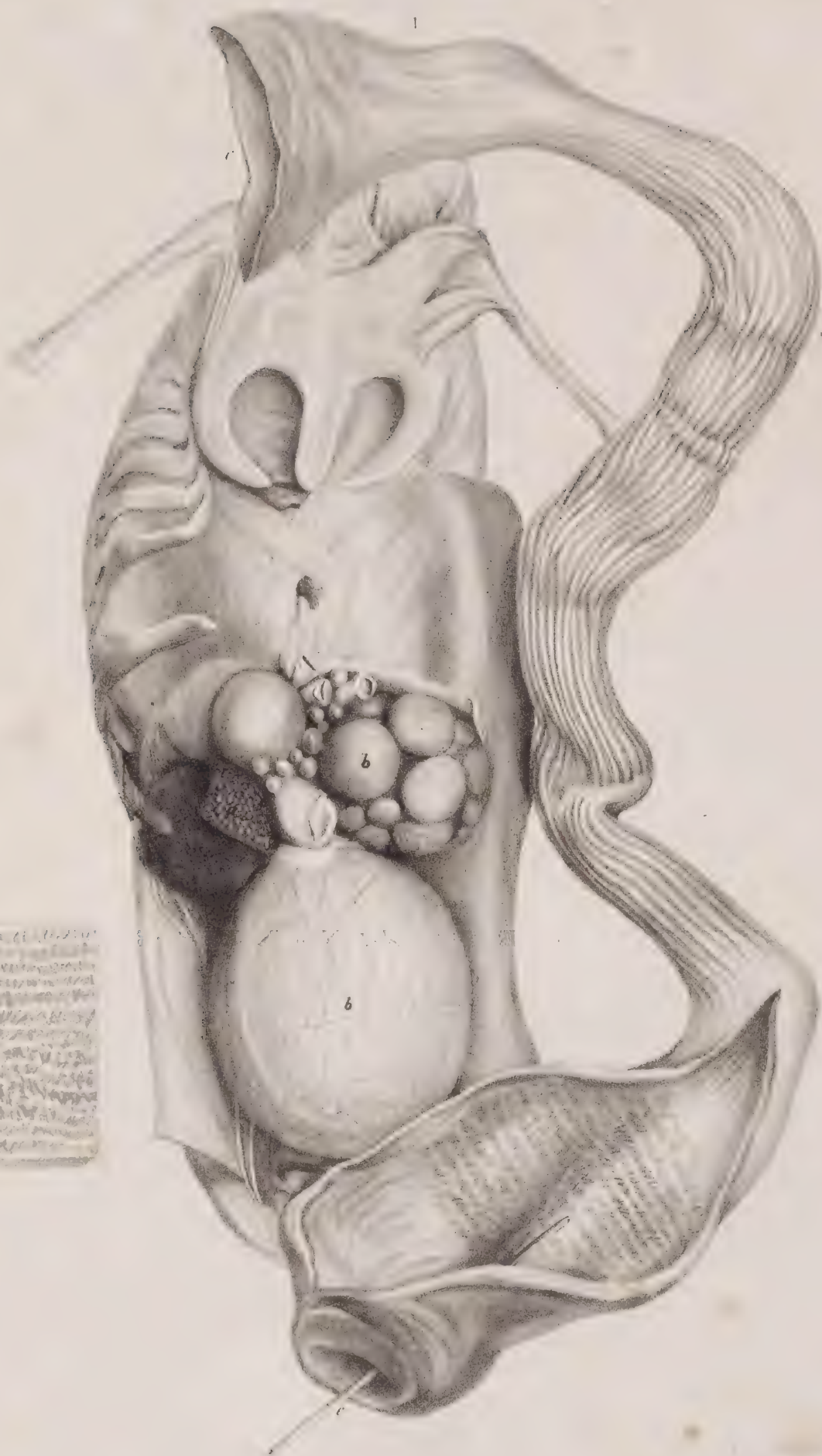
Scale $\frac{1}{4}$ the natural size.

J. Davis, sc.

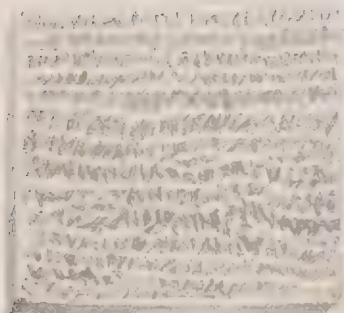


Aptenura - An. chelone
Cope, 1869, p. 100, fig. 100

1

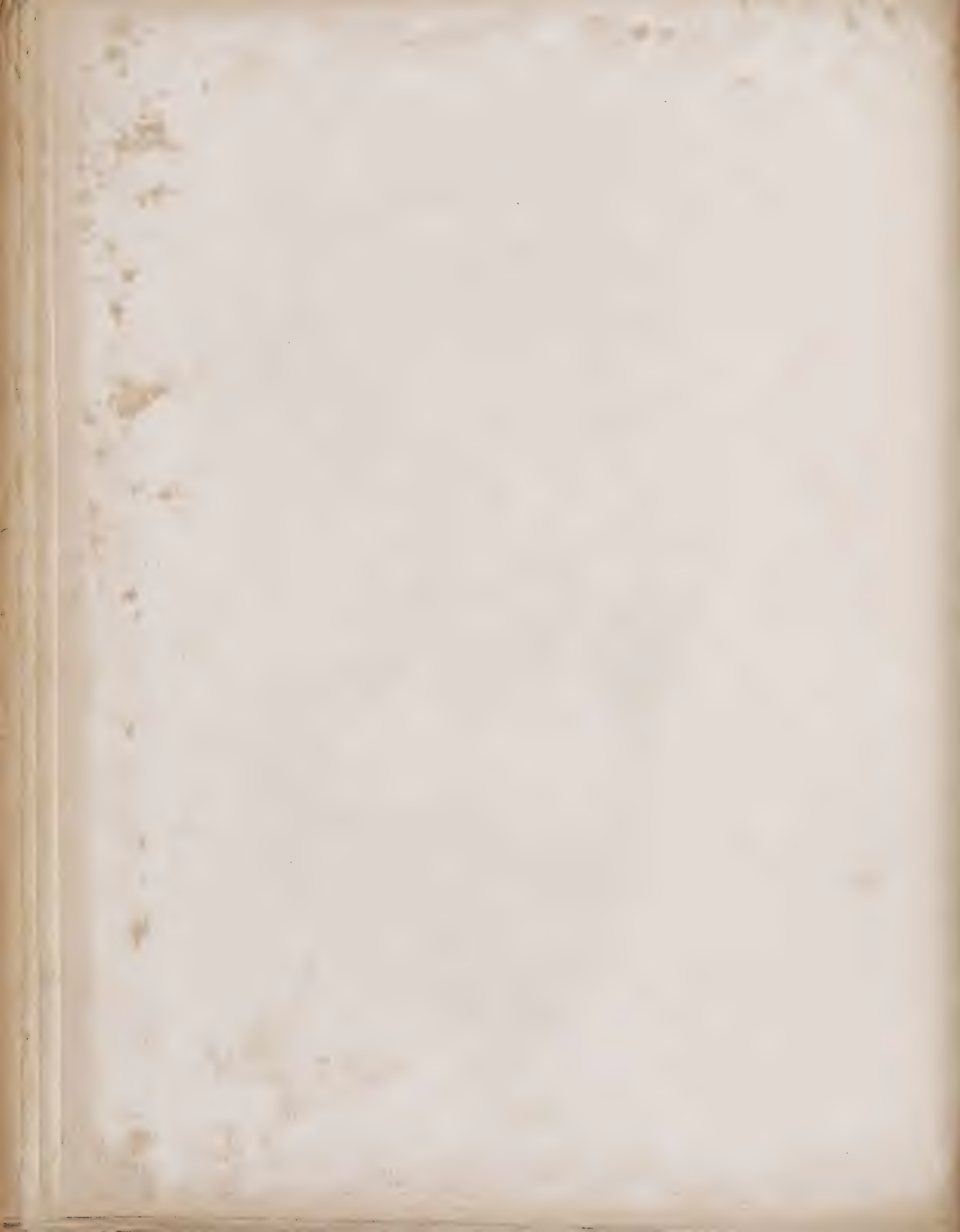


2



Pay & Haugh, Lith. to the Queen

Stroph. australis





From nat. on Zinc.

Day & Haghe Lithrs to the Queen.

4. 4 *Diceros struthioides*. 5 *Diceros neptus*.



1-9 *Dinornis*. — 10 *Apteryx*.





Engr. R. Haghe, del. to the Queen

1. 3. *Dinormis*. — 4. *Pruthia*.

2nd. Nat. Size.



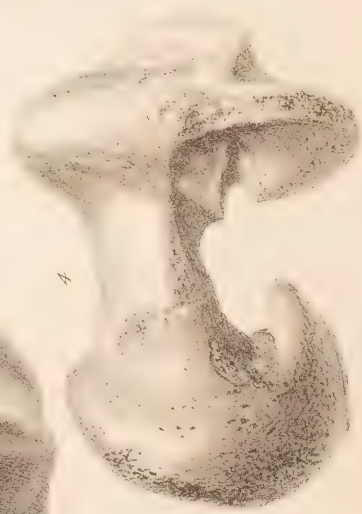
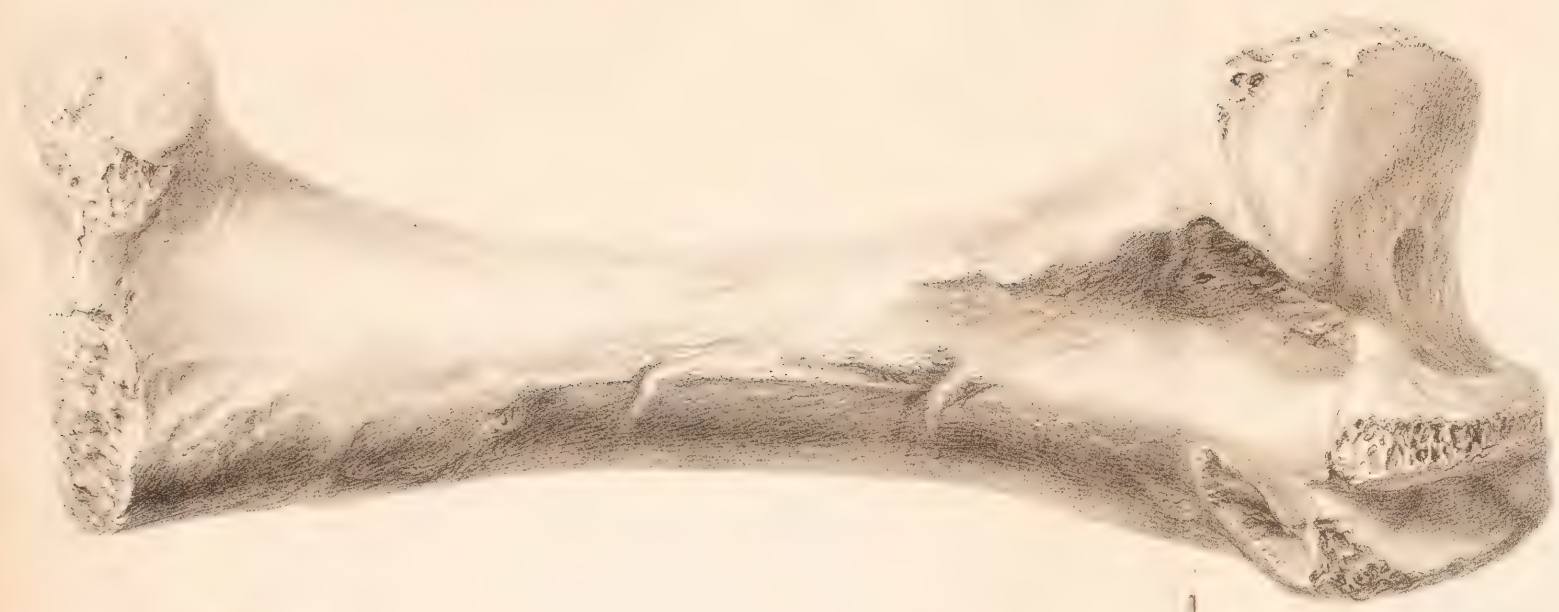




Nat. size.

Dinornis didymus

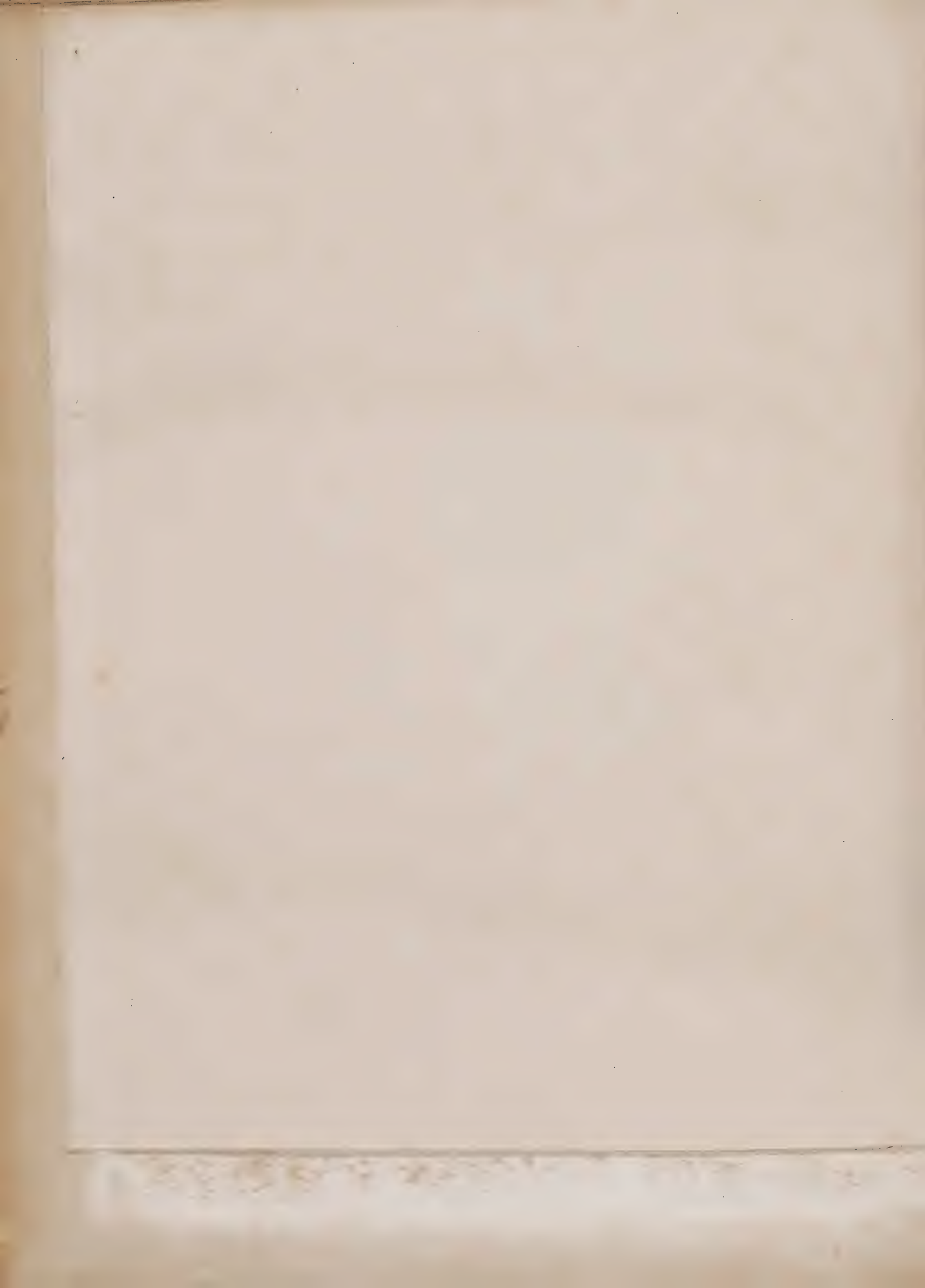




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Vol. Six

David and L.

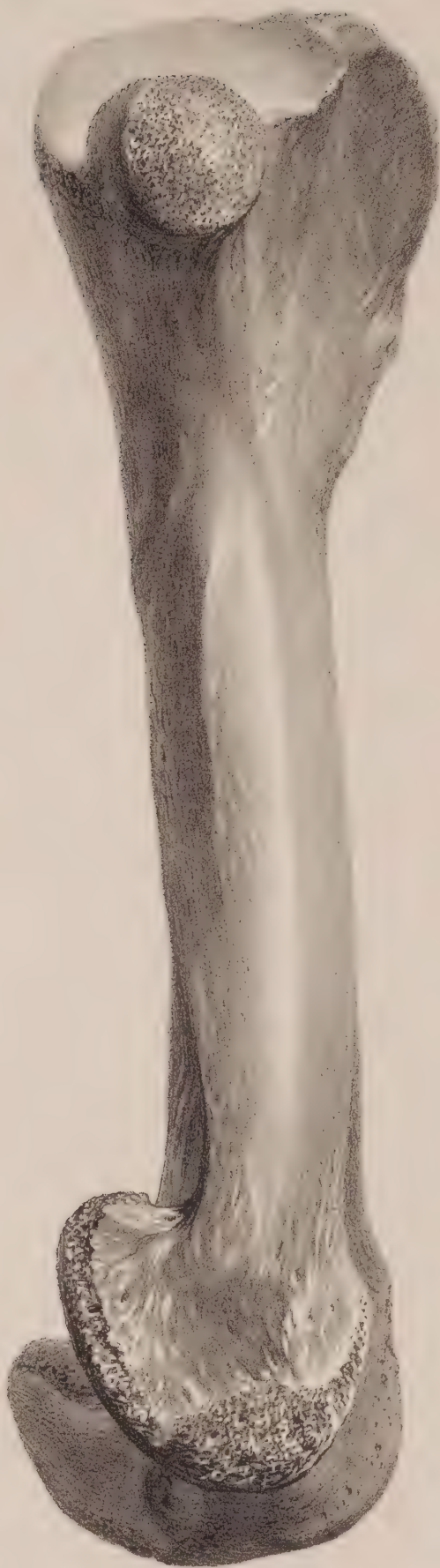
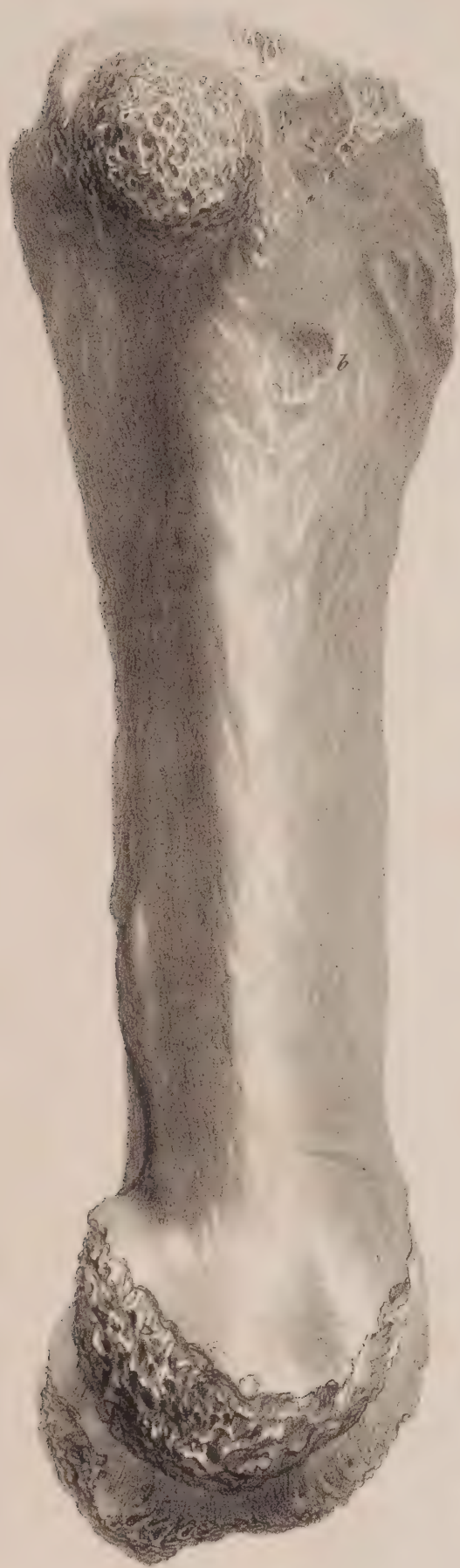




Ant. View.

Dinornis dromioides.

restored by C. Hutton and others.



Vit. Scie

1. *Dinornis struthoides*, juv. 2. *Din. dromioides*.

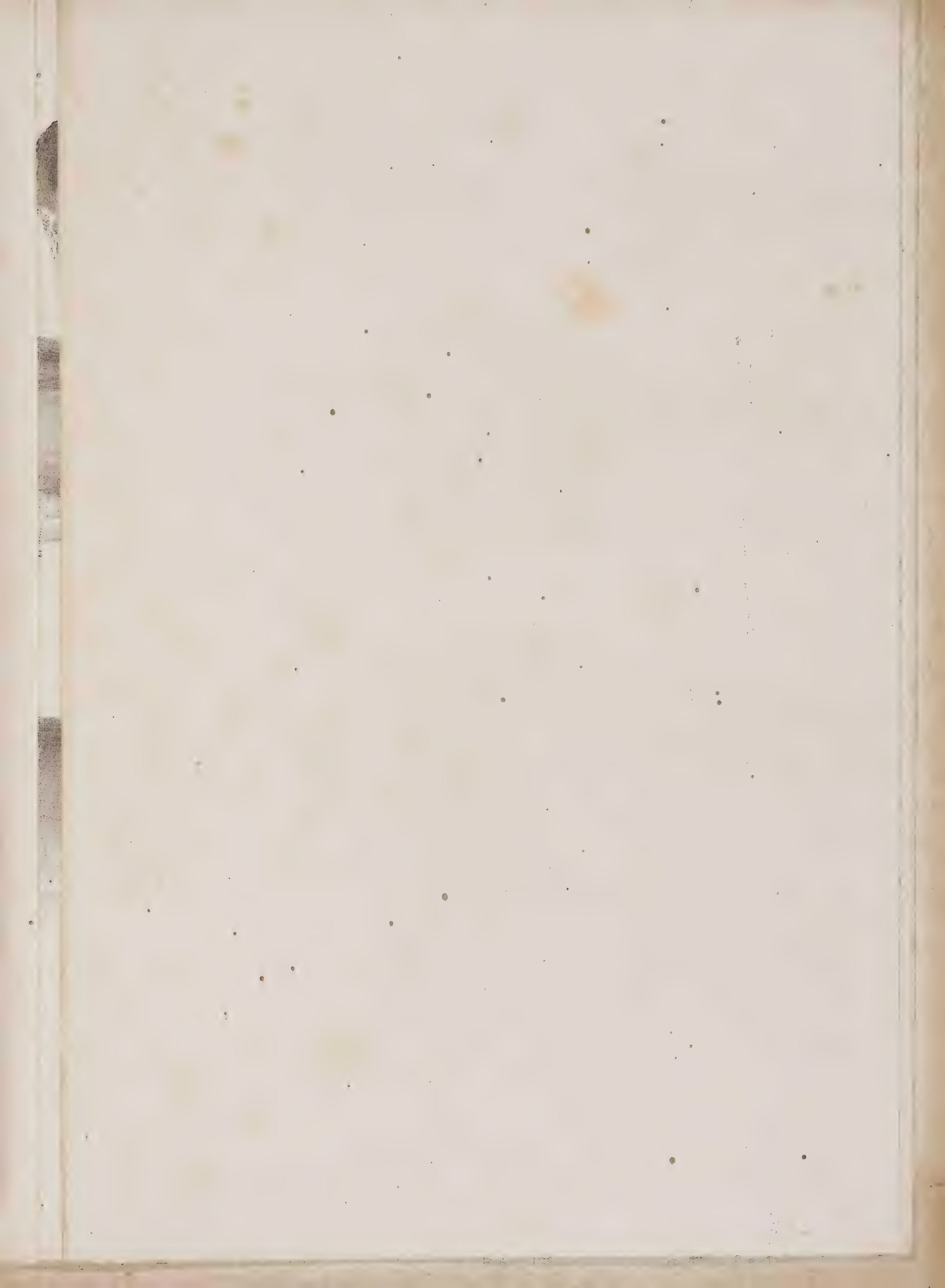


Dinornis didiiformis.

resting from stream by 3. 8. 11

Printed by C. F. Tinsman





PL. LXXV.



Fig. 1. Humerus.

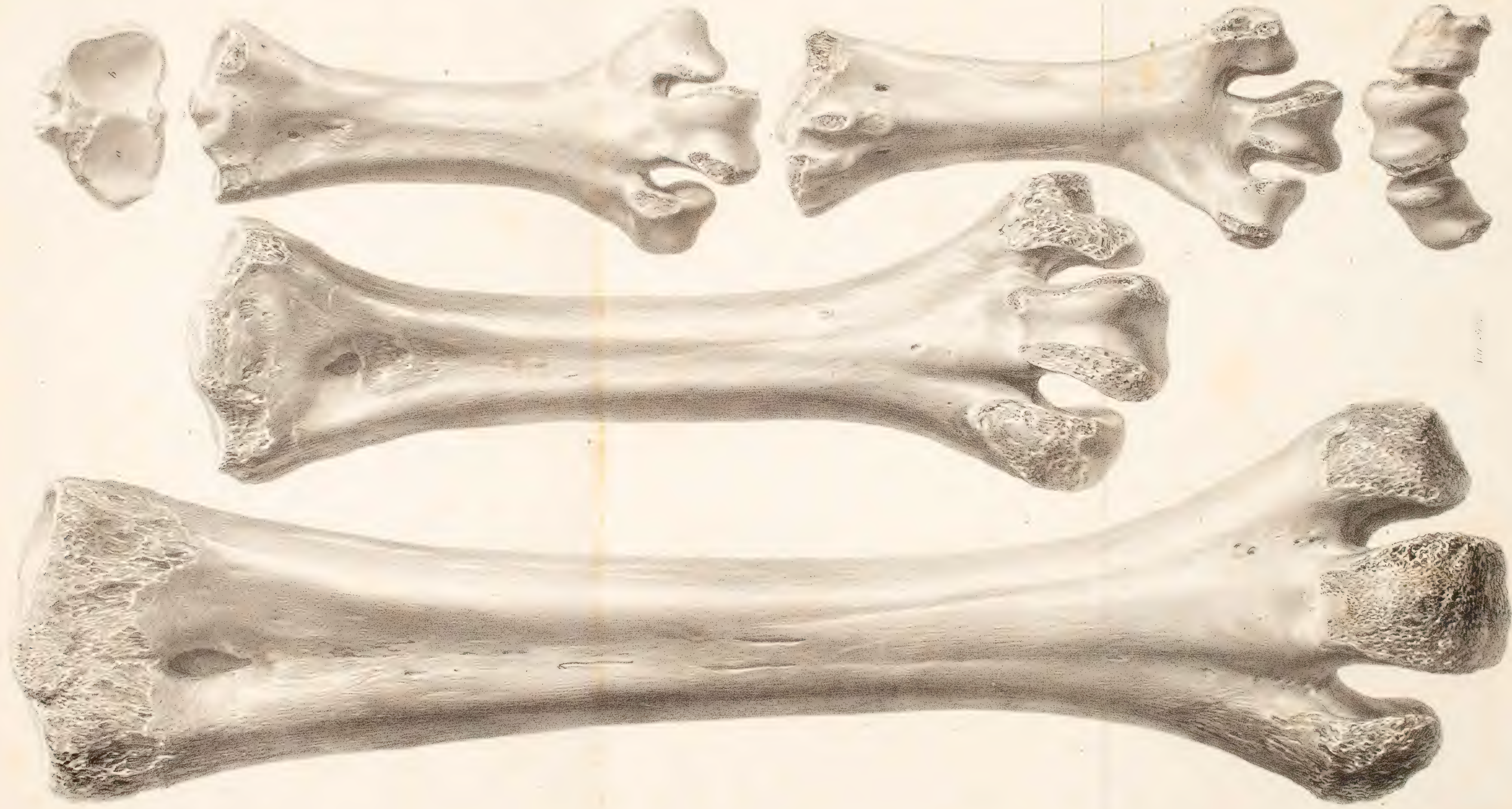
Fig. 2. Radius.

Fig. 3. Ulna.



Dinornis 1. giganteus. 2. struthio. 3. 6. didymus

Fig. 254



Metacarpus 1. Phalanx 2. Phalanx 3.



Wm. C. Cresson

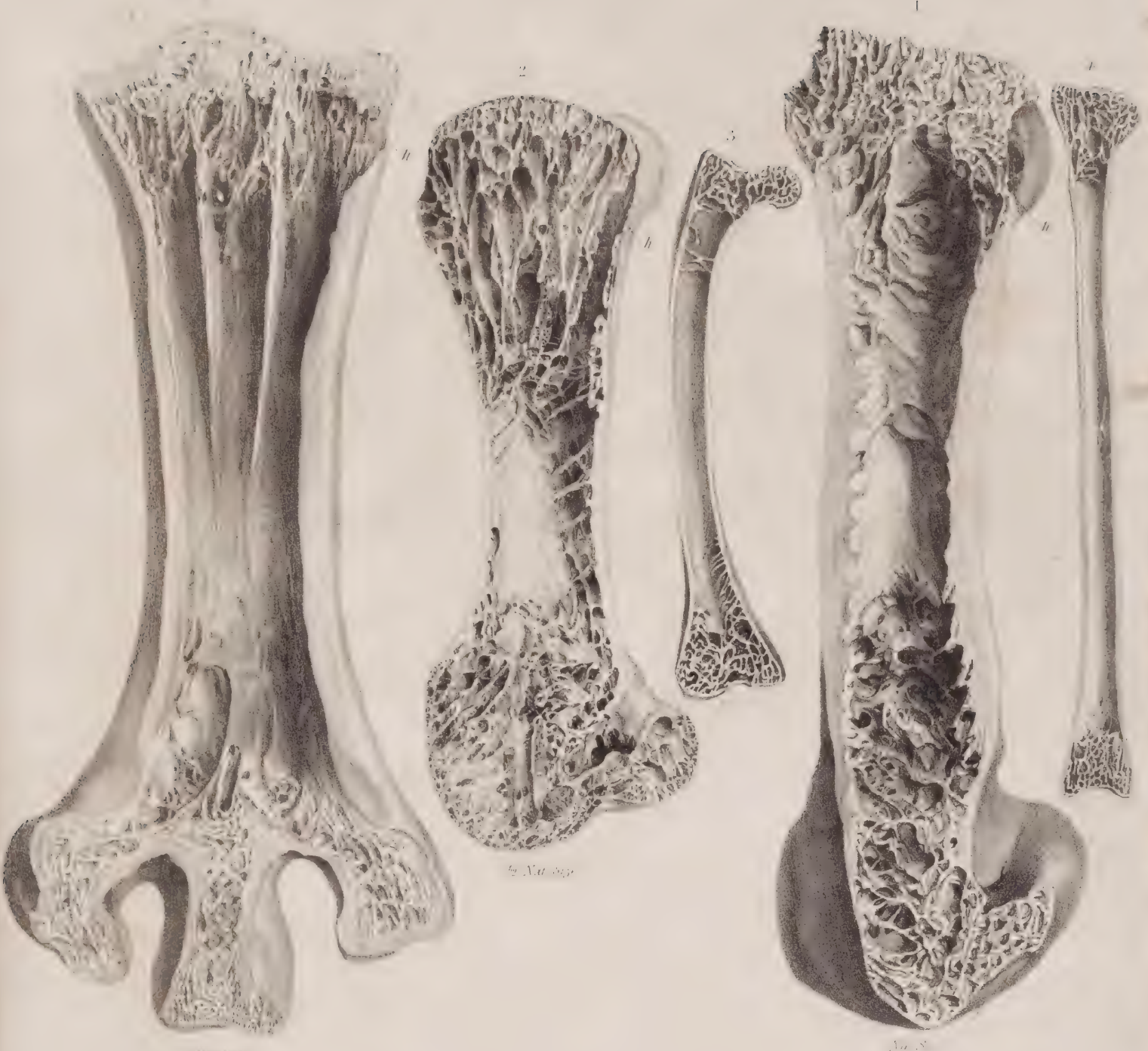
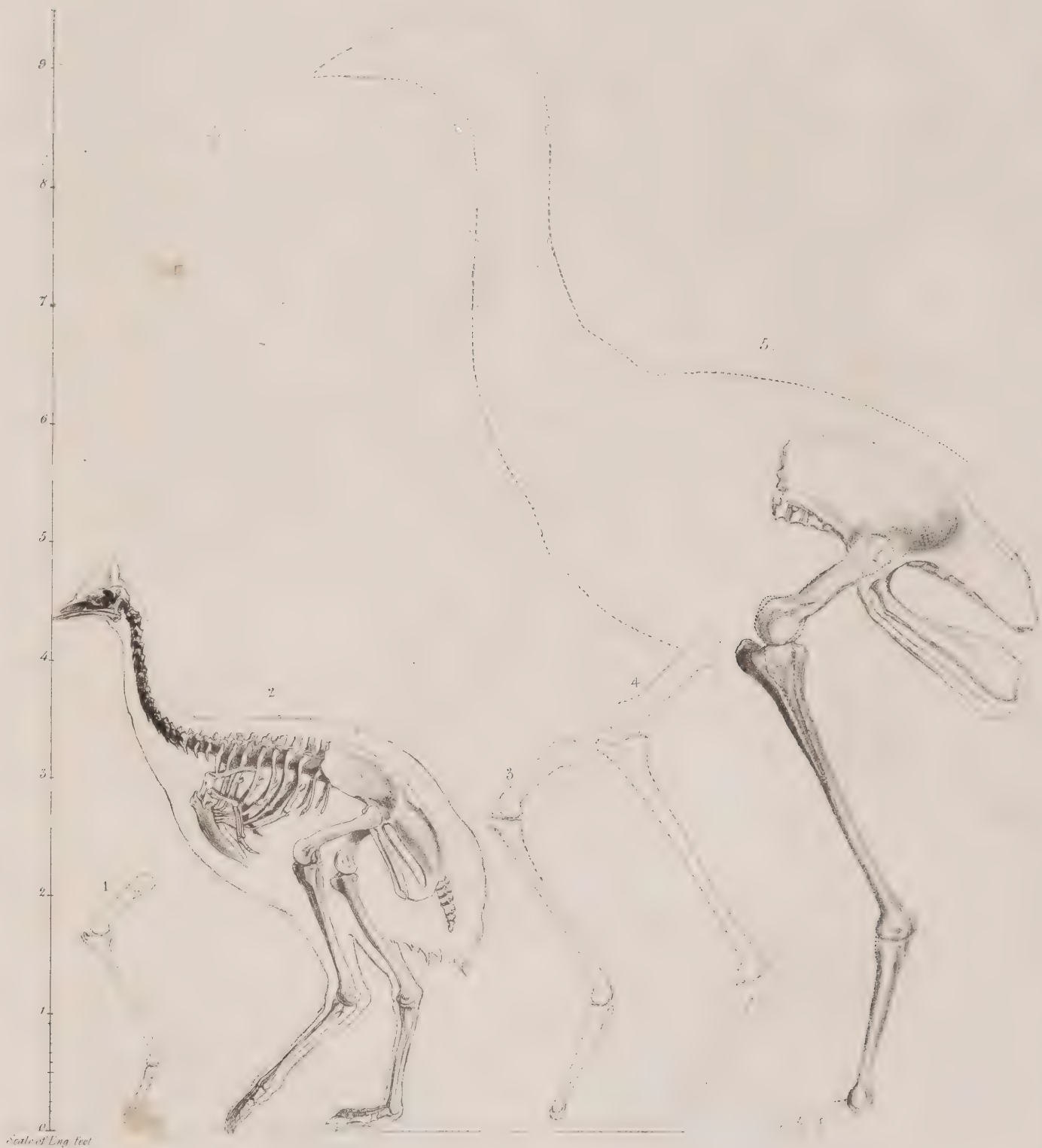


Fig. 1.

Fig. 2.

Fig. 3.



London: 1831.

Eng. & Haghe, Lith. & Col. Soc.

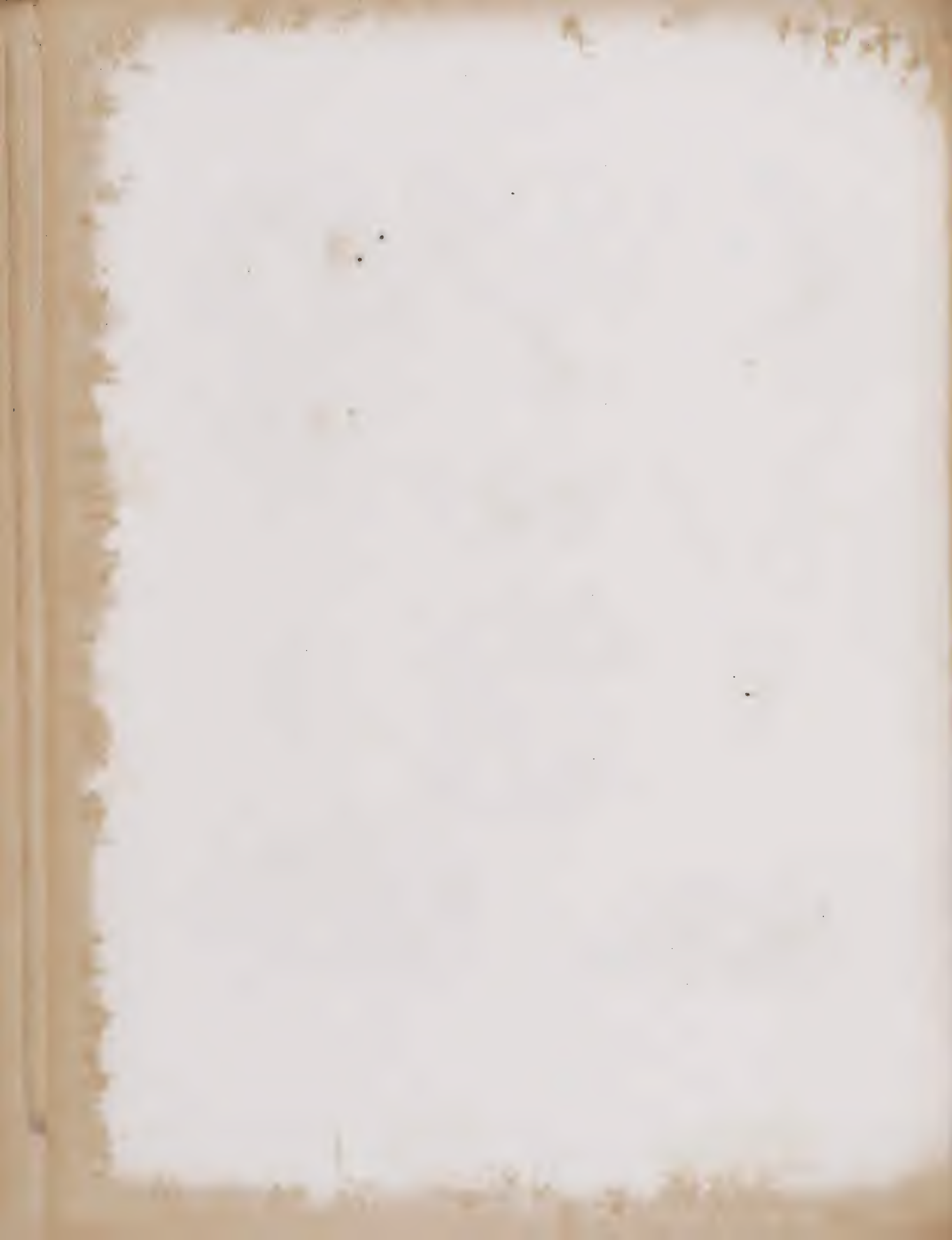
Dimorphis. — 1. *didiformis*. — 3. *struthoides*. — 4. *ingens*. — 5. *giganteus*.
 ? *Parasaurichthys*

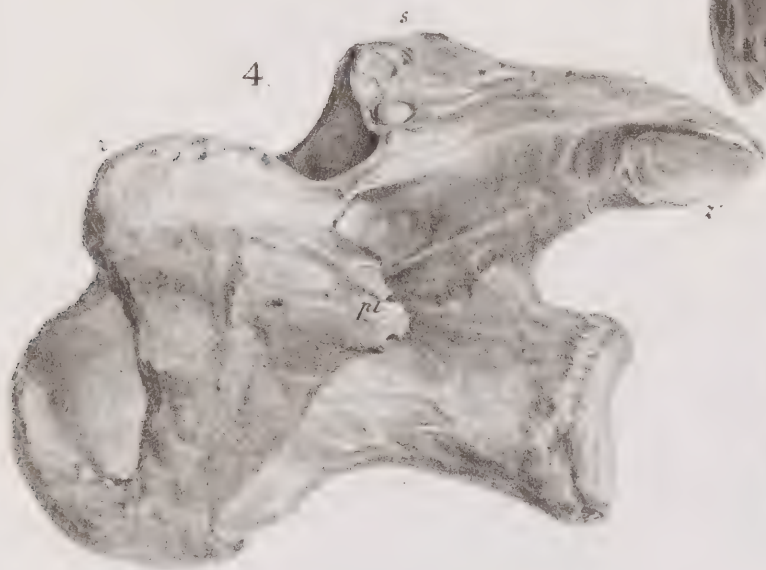
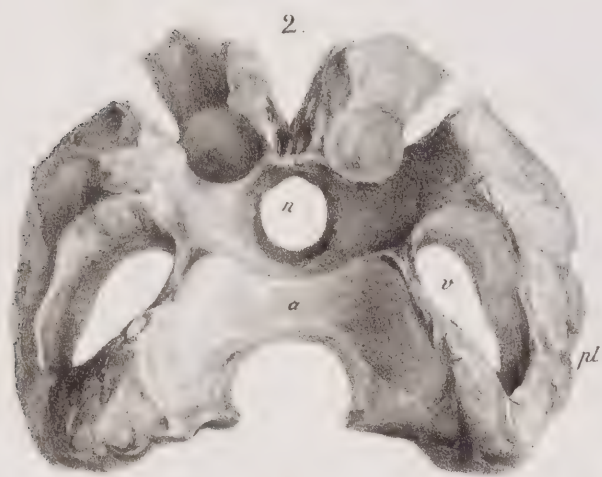
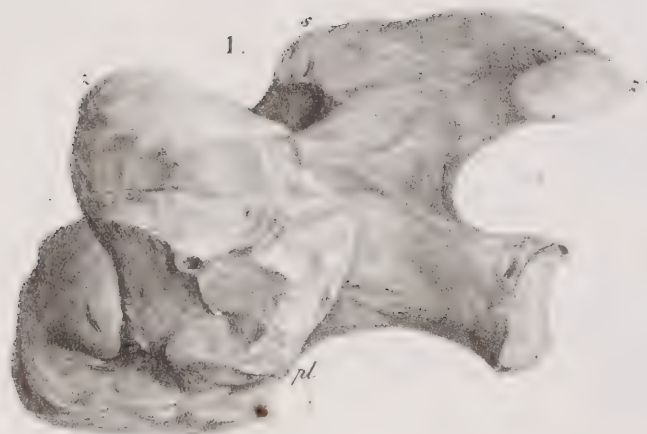


J. Verbeke del. et lith.

Day & Mayhew lith. to the Hon.

1. 2. 3. *Dromaius*. 4. 5. 6. *Limornis dromuoides*. 7. *Limornis gigas*. 8. *Struthio*. 9. *Apteryx*.





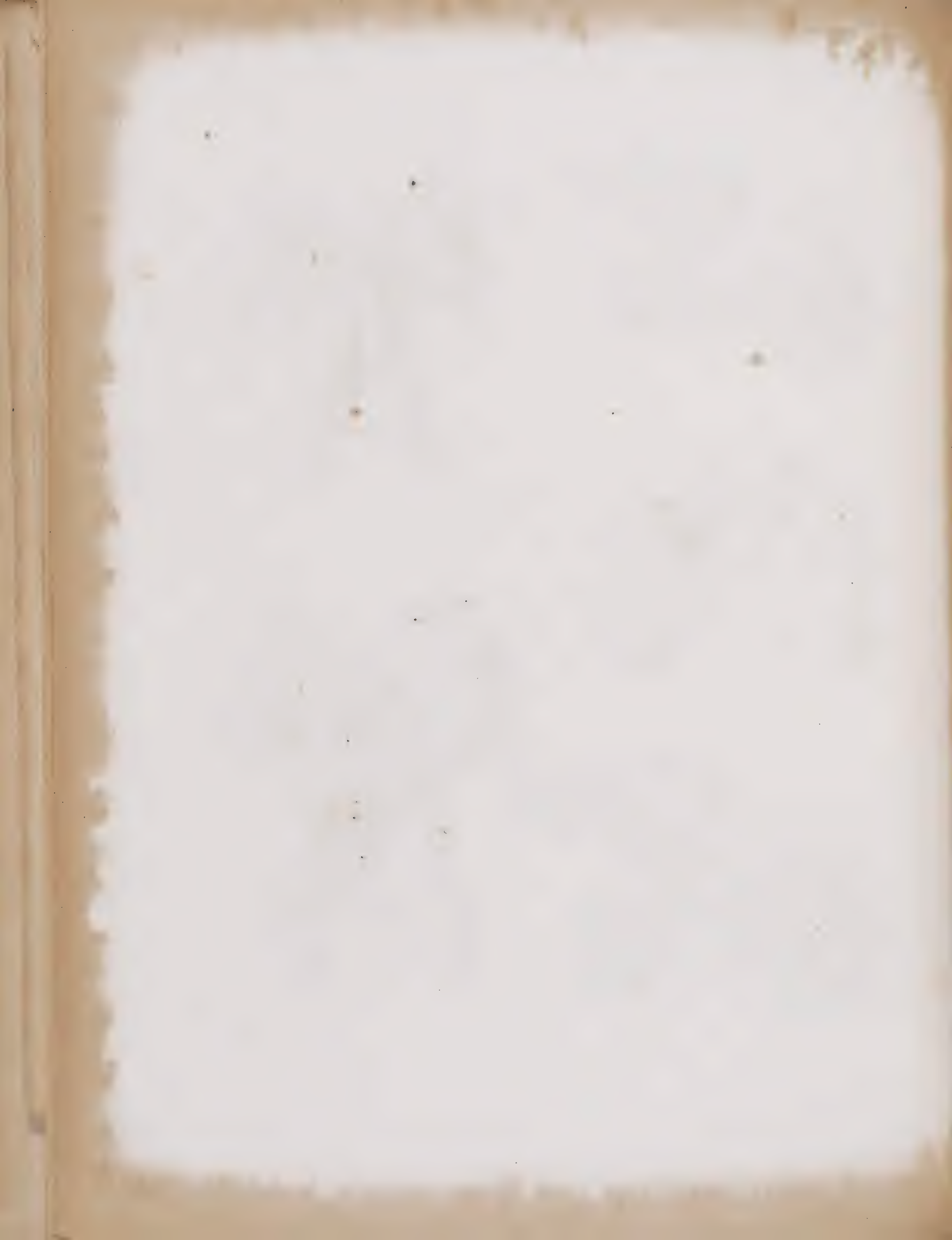
J. Eustachius Pinx.

Nat. Sue.

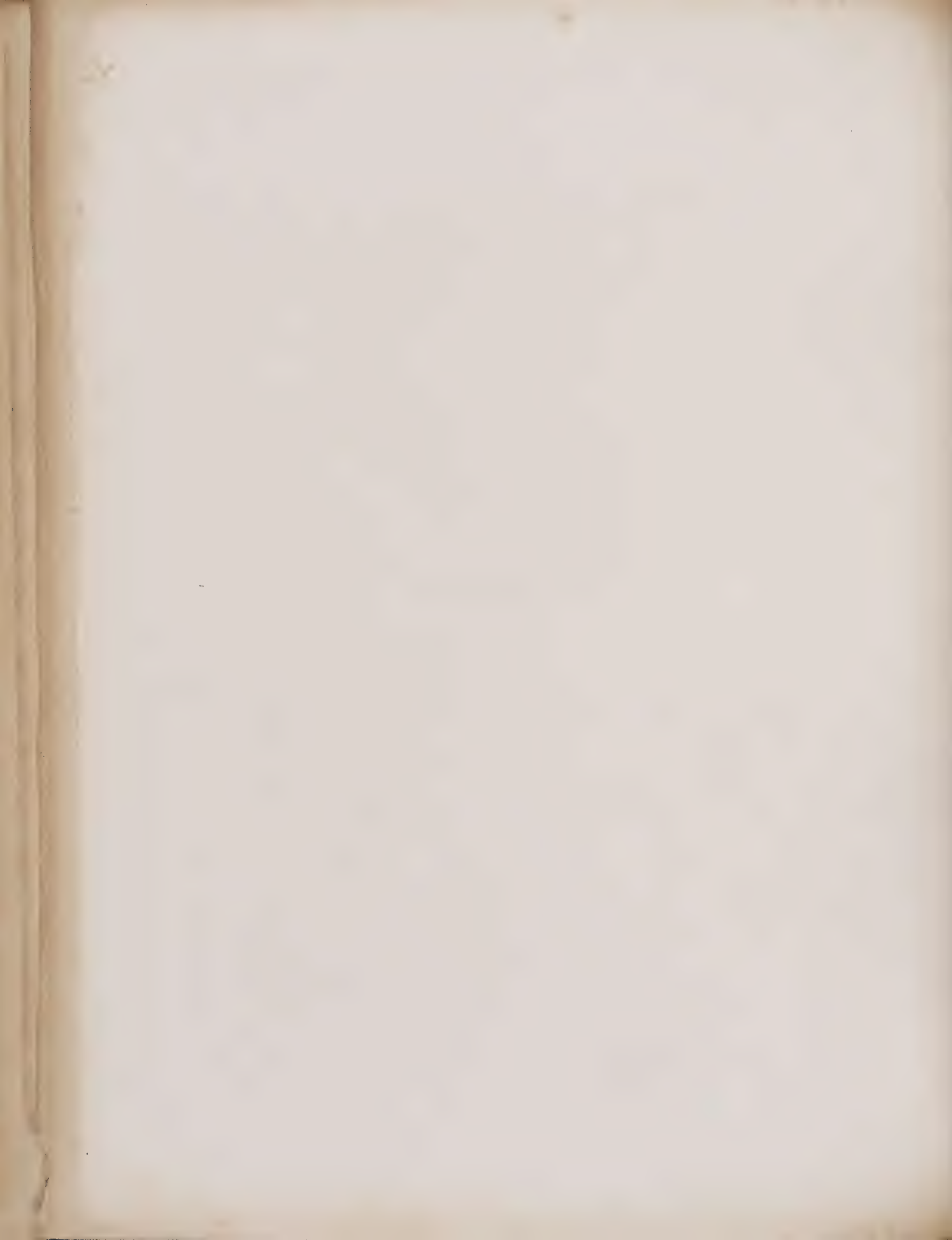
Dez & Haghe lith. to the Queen

Cervical vertebrae

1. 3. *Dinornis ingens* 4. 5. *Din. giganteus*









J. Erleben. Sculp.

Nat. Size.

Day & Flagge lith^d to the Queen

Dental vertebrae

1. 2. *Dicernis orafus* (?). 3. 4. *Din ingens*

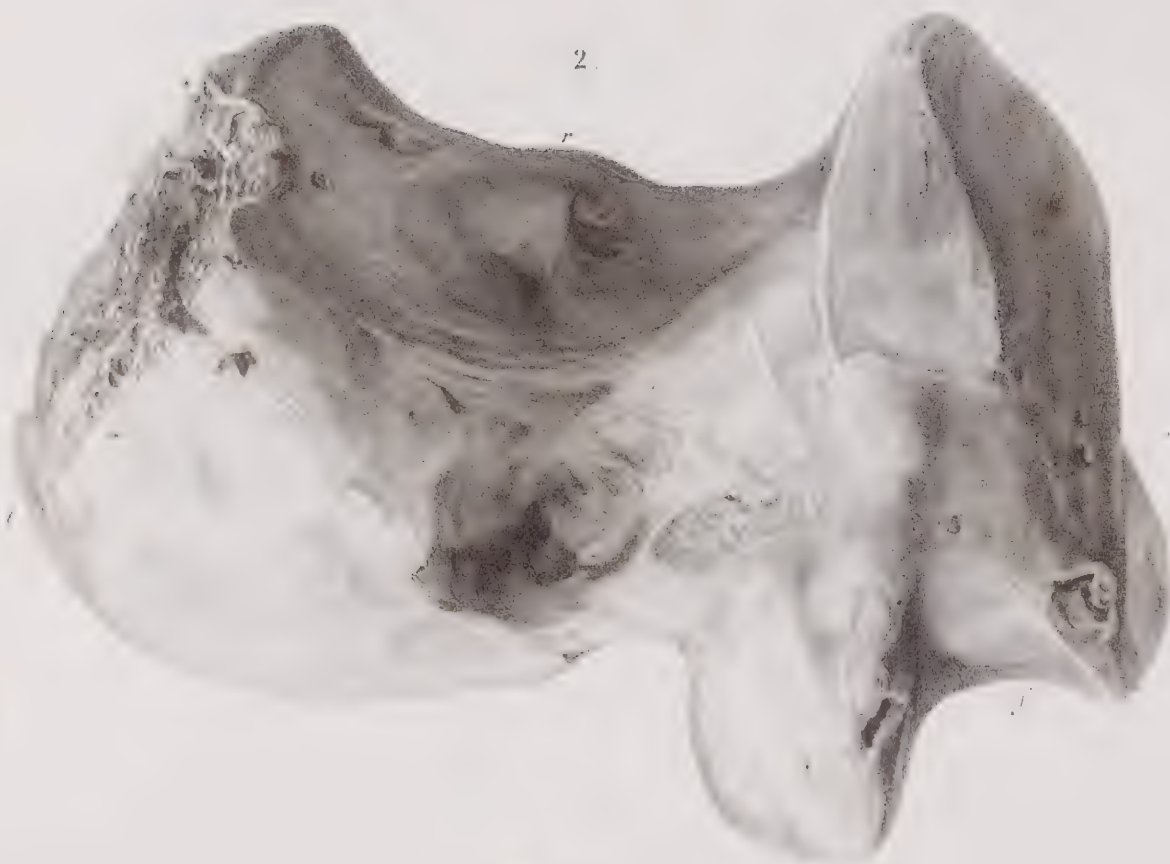


Herrn.

1. 2. 3. *Dinornis* 4. *Struthio* 5. *Rhea* 6. *Casuarus* 7. *Trernaius* 8. *Spteryx*

Nat. Size

Engr. & Hatched by the Queen



Nat. Size

Linornis giganteus

Drawn by H. H. H. to the Queen





Day & Hughes sculp.

1 *Dinornis gigas*. 2 *Struthio*. 3 *Dromaius*. 4 *Argala*.



Engraven in Zinc

f

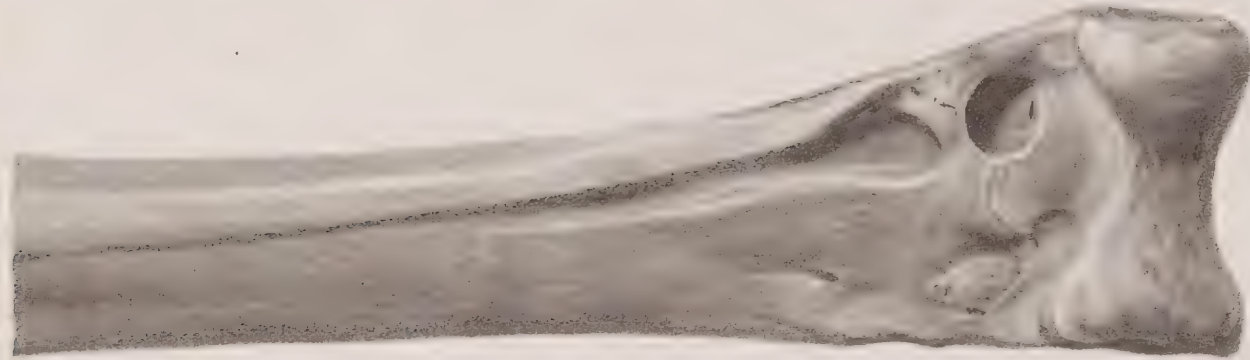
Nat. Size.

Day & Haghe lith^{rs} to the Queen.

Pinernis casuarinus.



Nat. Size



Tibia



Day's Magazine 1871 to the Queen

Dromopteryx dromioides 2. *Dromopteryx casuarinus* 3.—5. *Dromopteryx curtus*.



Nat. Size.

Tibia

1. *Halcyon dromicoides*. 2. *Penelopis castaneus*. 3-5. *Pin. curtus*.

Depth of angle 1/10 to 1/20 of the Quatern.

4.



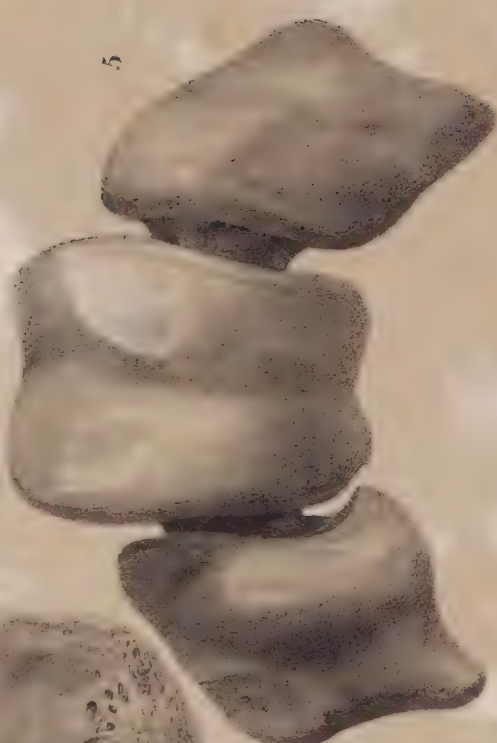
6



1.



5



Nat. Size.

Tarso - metatarsus

J. Enslin. Scin.

Dep. of Hays, Lib. 17 to the Queen.

Quercus ingens 2 *Quercus borealis* 3 *Quercus coccinea* 4 5 *Quercus prinus* 6 *Quercus*



1. *Trachurus lineatus*

Nat. Size.
Tarsus — metatarsus

2. *Trachurus lineatus*

3. *Trachurus lineatus* 2. *Trachurus lineatus* 3. *Trachurus lineatus* 4. *Trachurus lineatus* 5. *Trachurus lineatus* 6. *Trachurus lineatus*



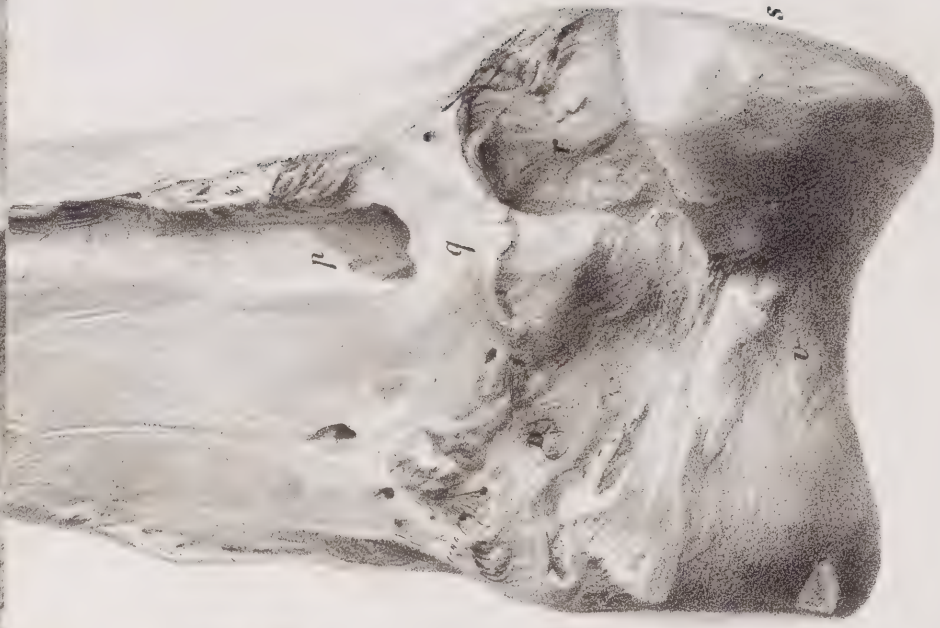
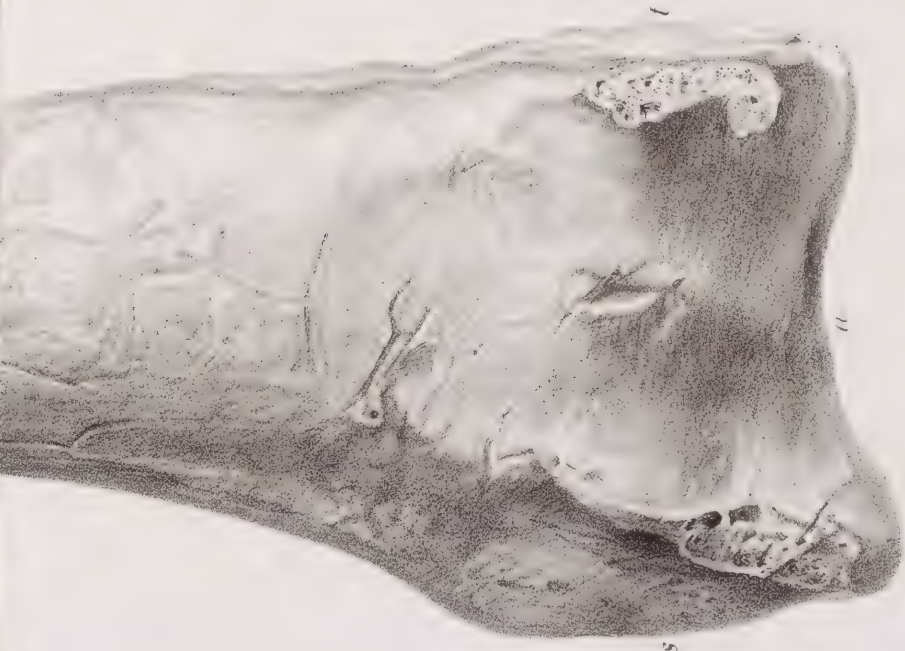
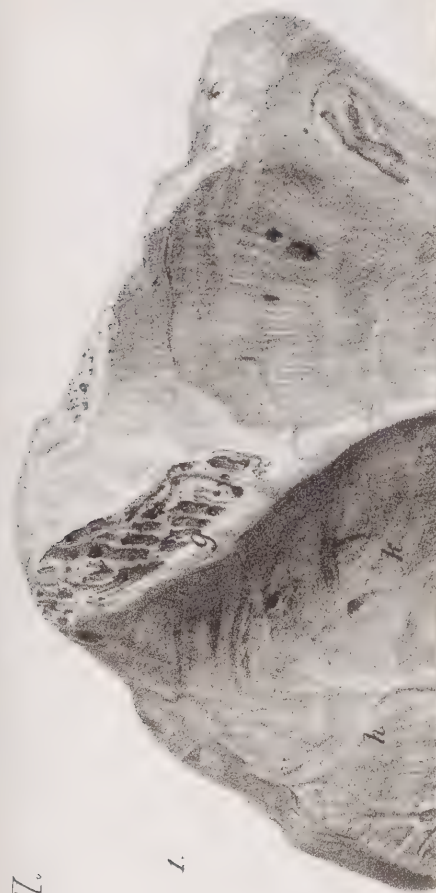
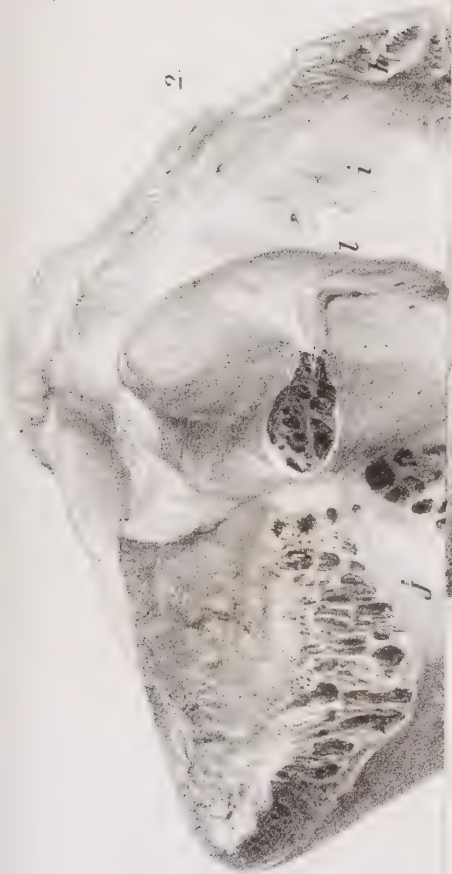
from nature on stone by J. Huxley.

DINORNIS GRAVIS

M & N Hanhart imp



DINORNIS GRAVIS



3. DIPLOEUS GRAVIS 4. DROMAIUS.

From rat on skull by J. E. Velez.

Printed by M&N Hanhar

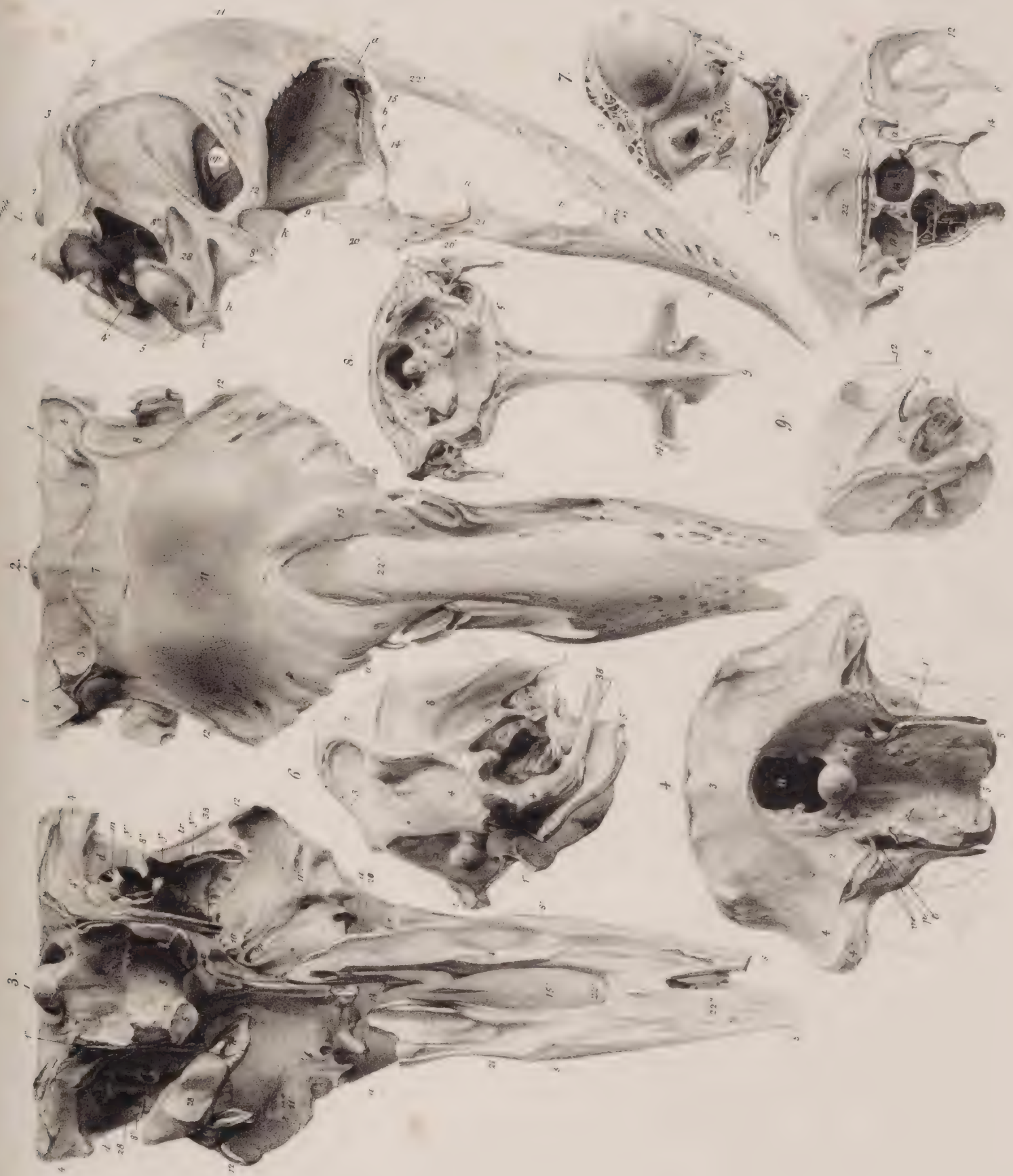


PLATE XXXVII



PLATE XXXVIII



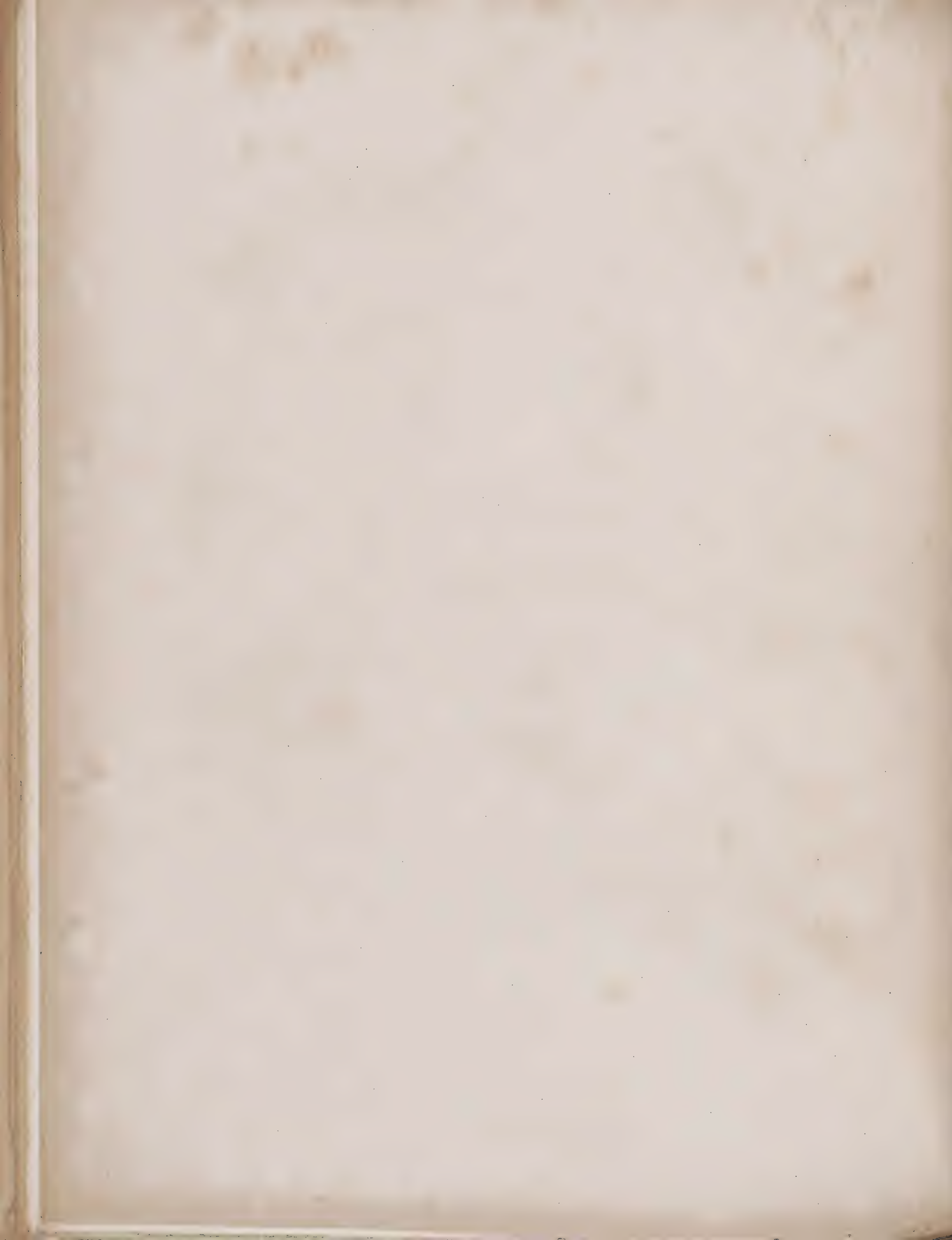


From Nature on Zinc by J. Erazelton.

Nat. Size.

Day & Son. Lithog^{rs} to the Queen.

1.-7. *Apotornis*. 8.-9. *Otis*.





From Nature on Zinc by J. Erxleben.

Nat. Size.

Day & Son Lith^{rs} to the Queen.

1-2-3-8-9-10. *Dinornis*. 4. 5.-6. *Struthio*. 7. *Palapteryx*. 11.-12. *Vultur*.



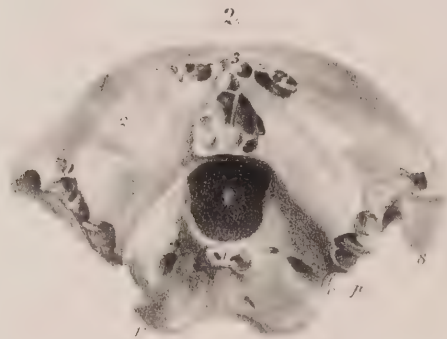
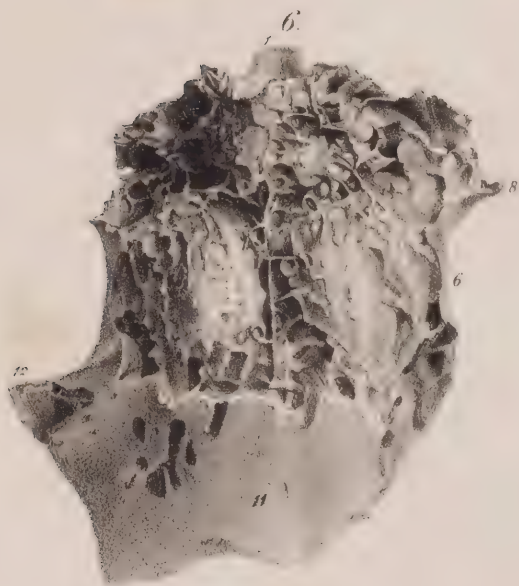
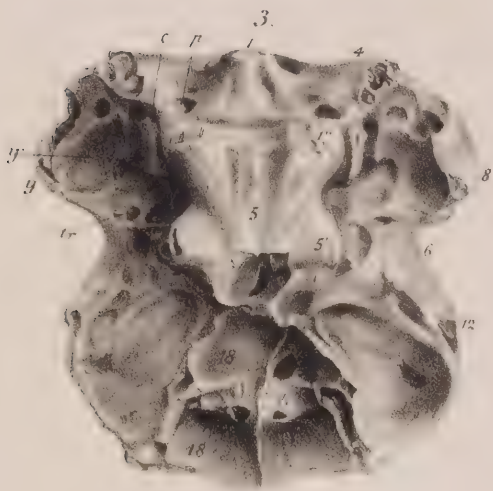
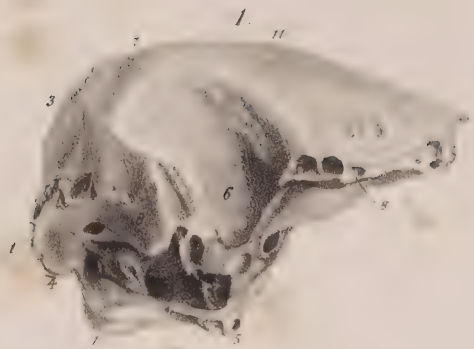
Dinornis

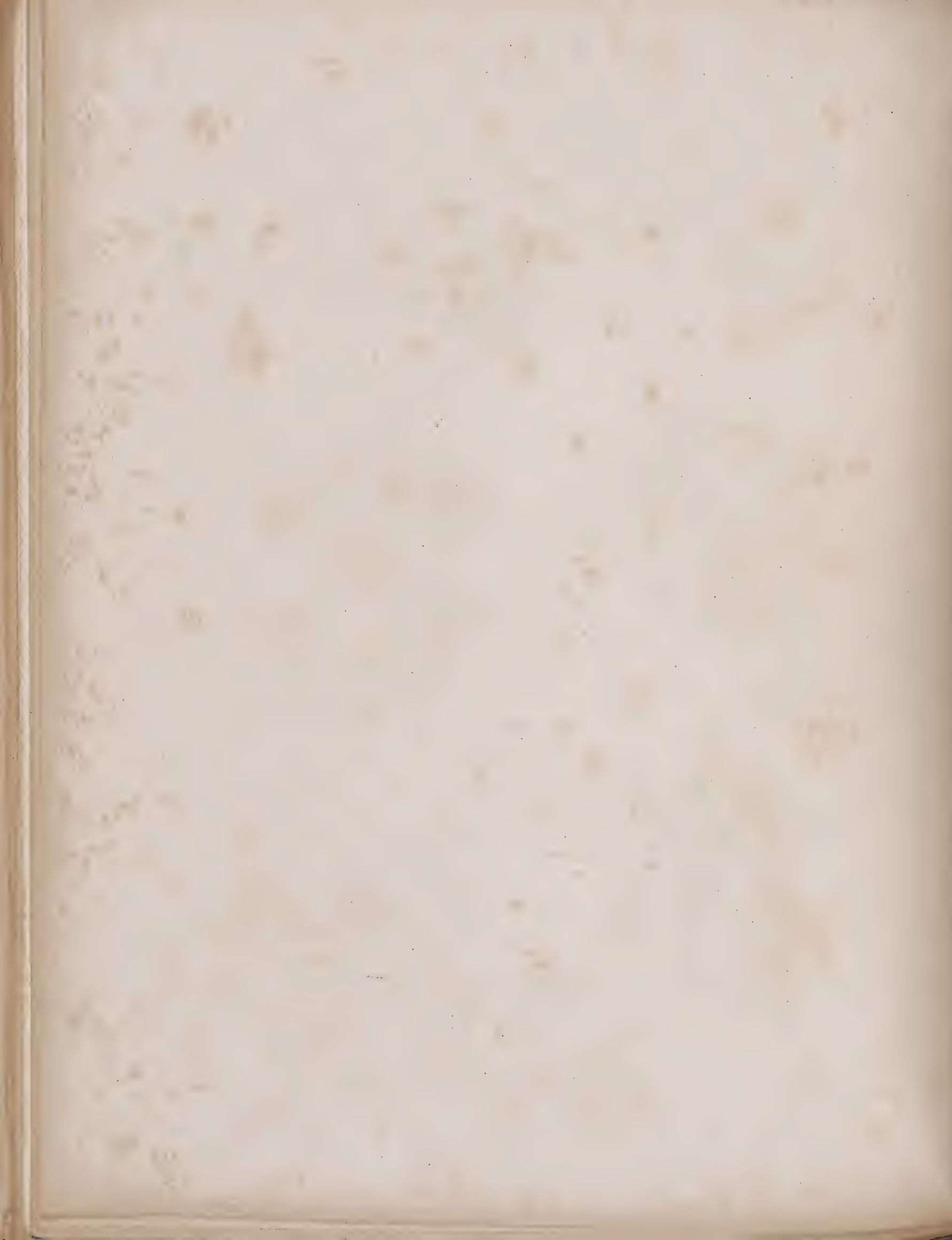
9.

Nat. Size.

Drawn by Son-Lith. to the Queen.

Palapteryx!









Dug. & Son Lith^{rs} to the Queen

Palapteryx robustus.







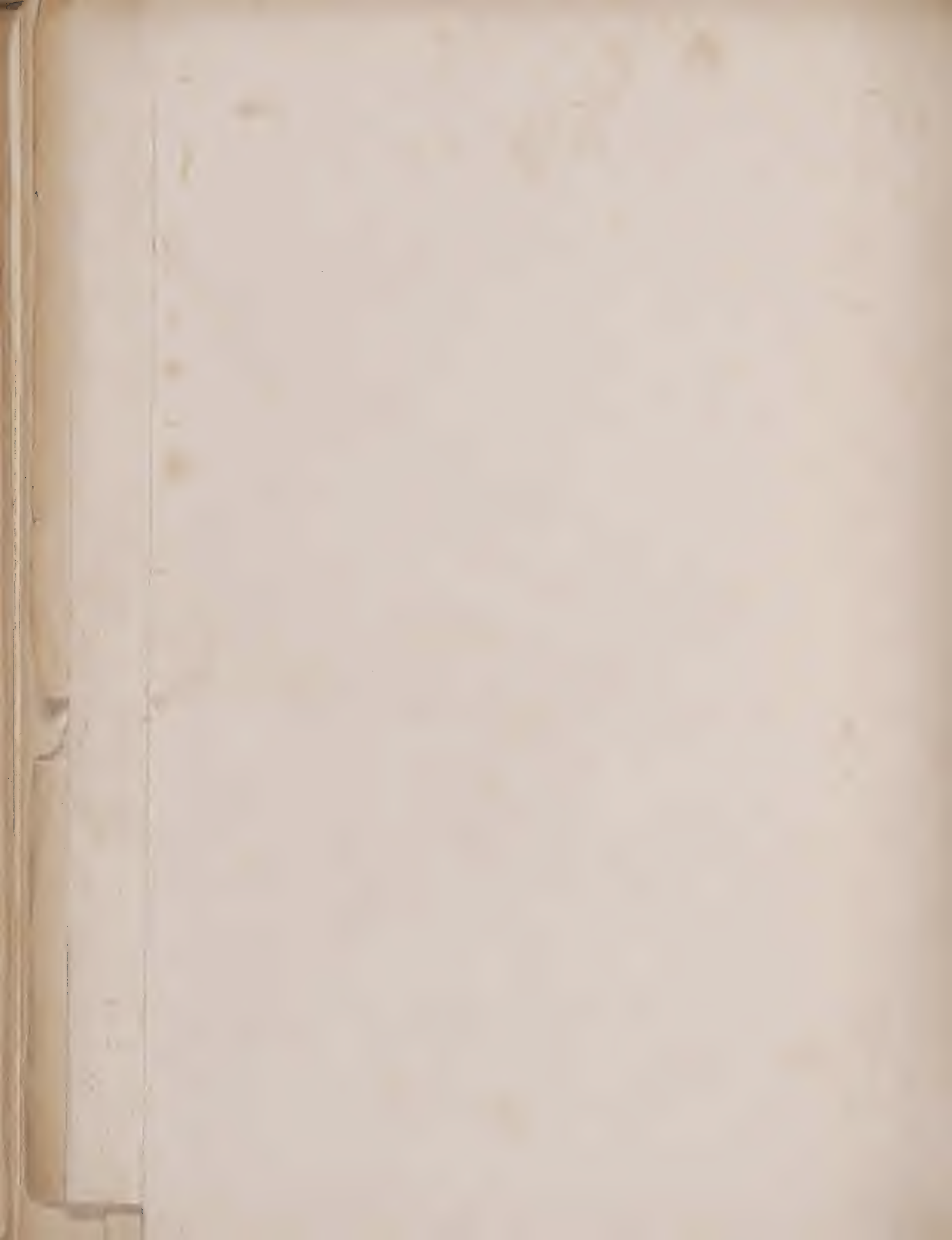


Gadapleryx robustus.

Try to find the center

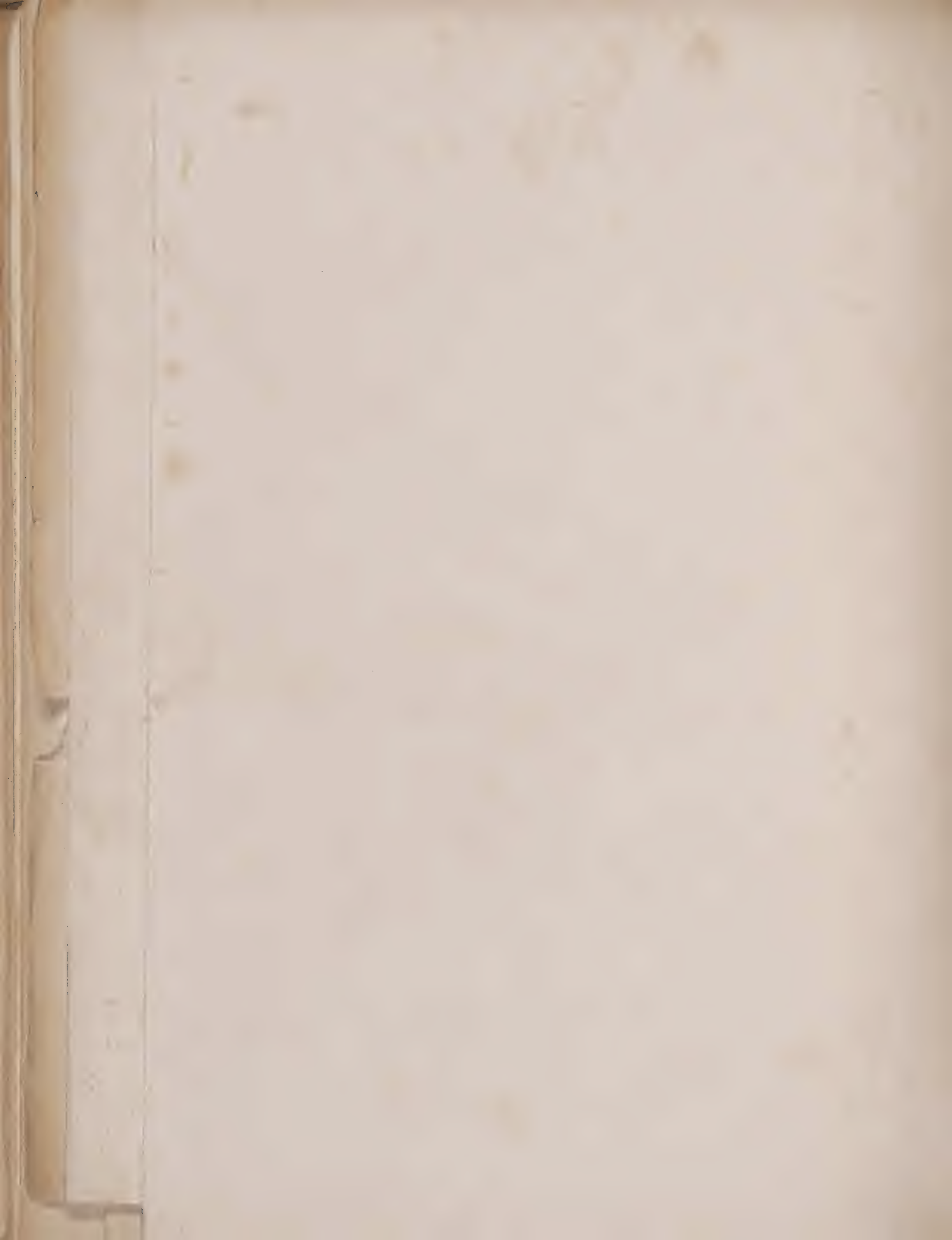


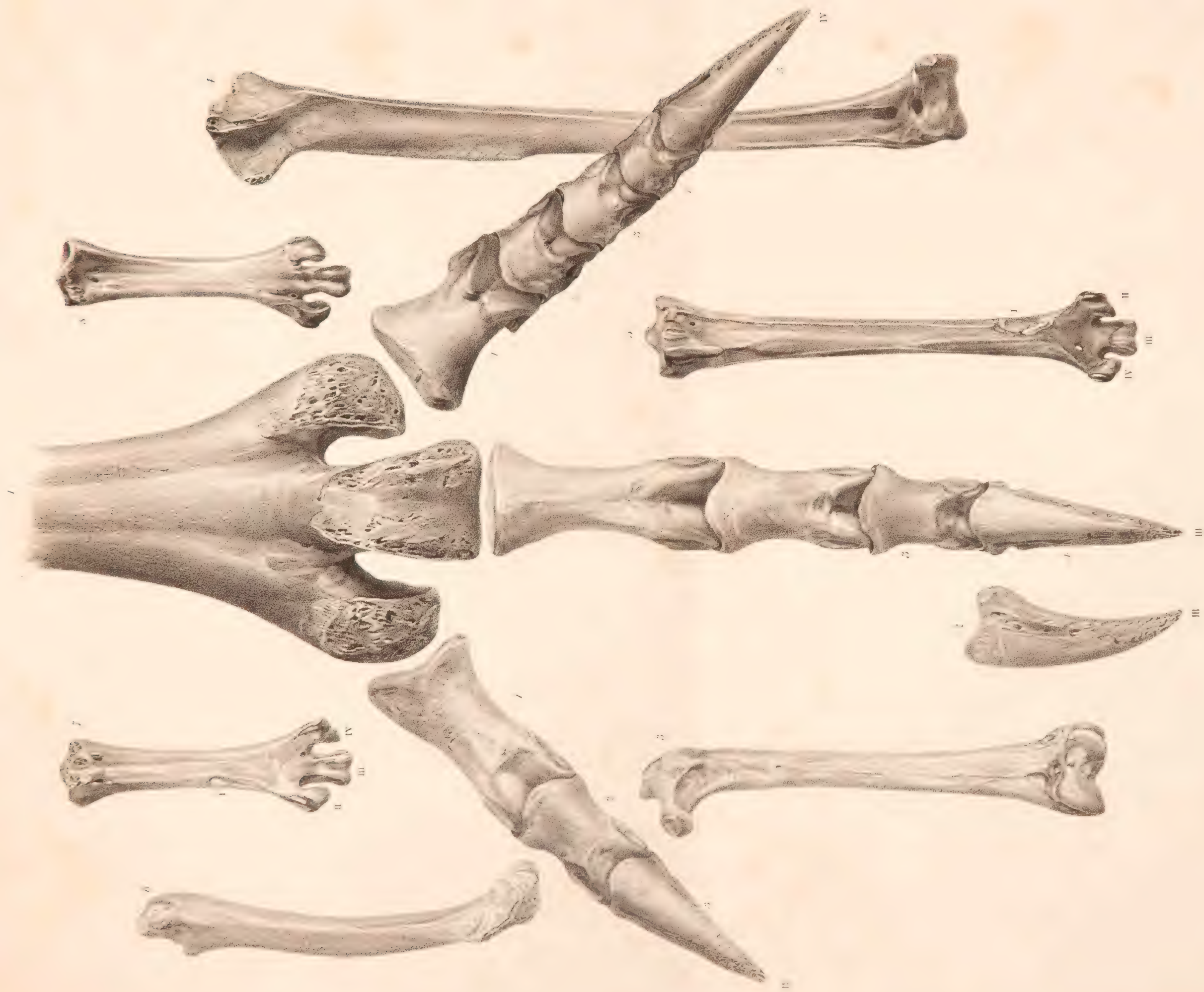




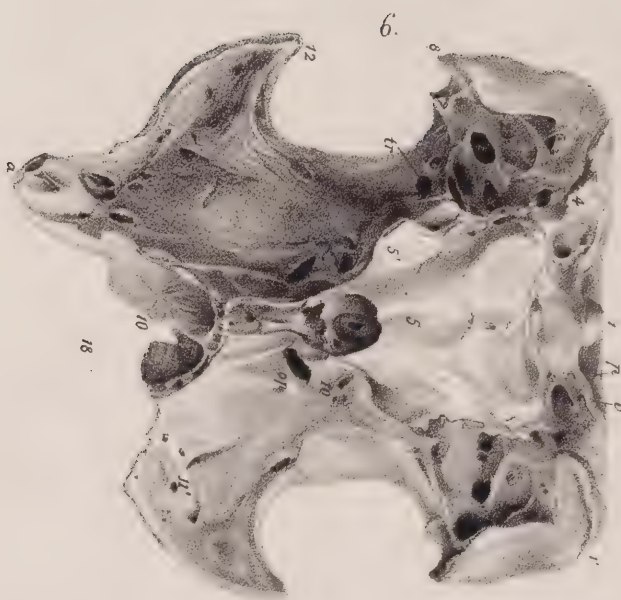
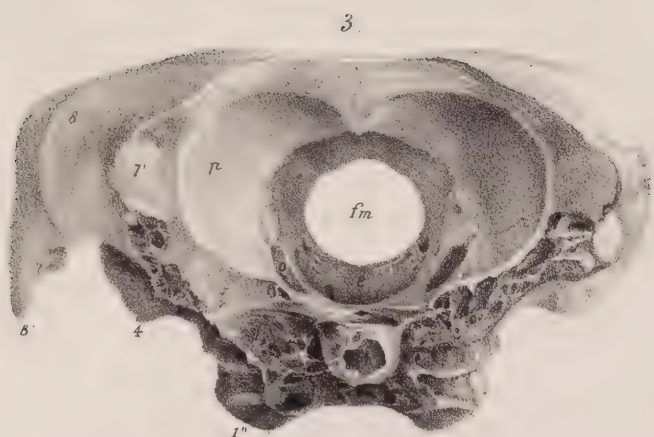
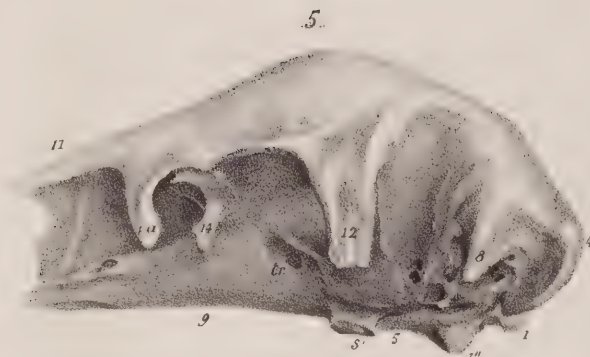
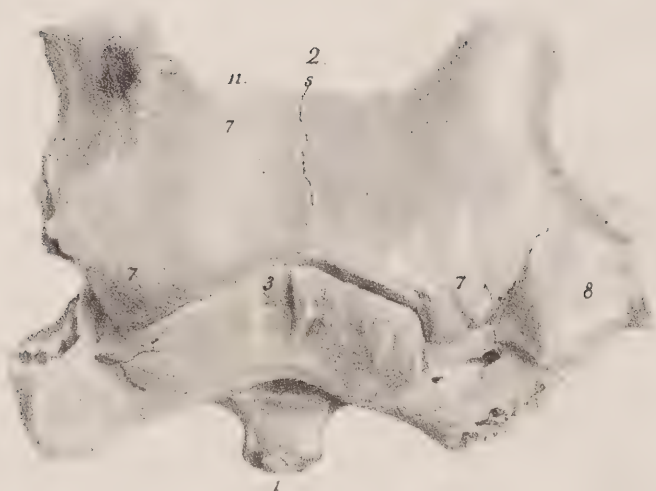
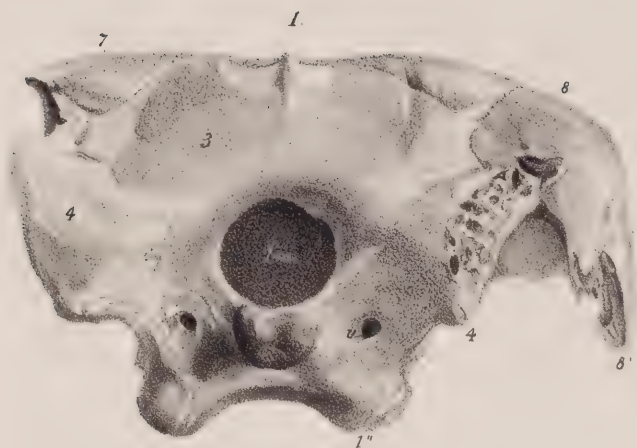
Pl. II.

1









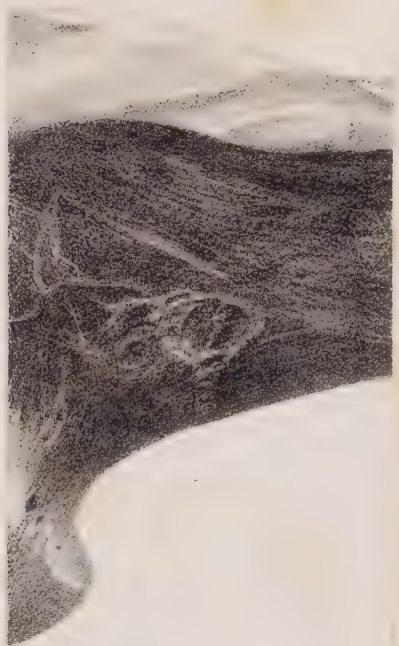


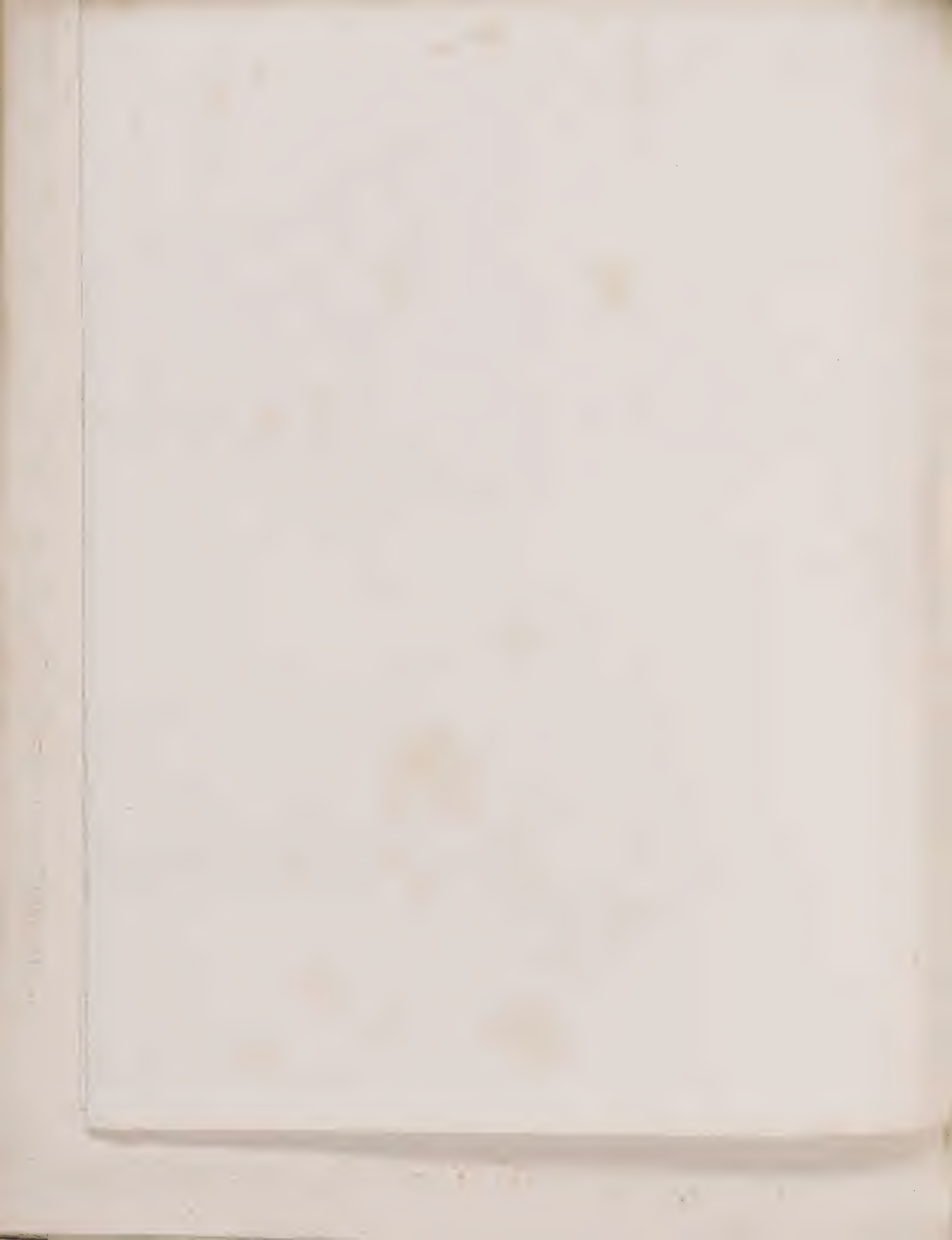


Fig. 183. Humerus gracilis. Fig. 184. Humerus struthionides.

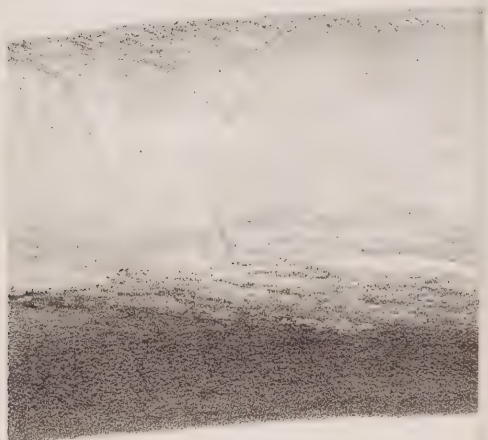
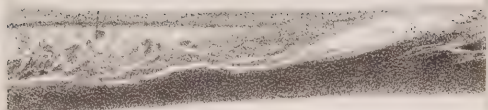


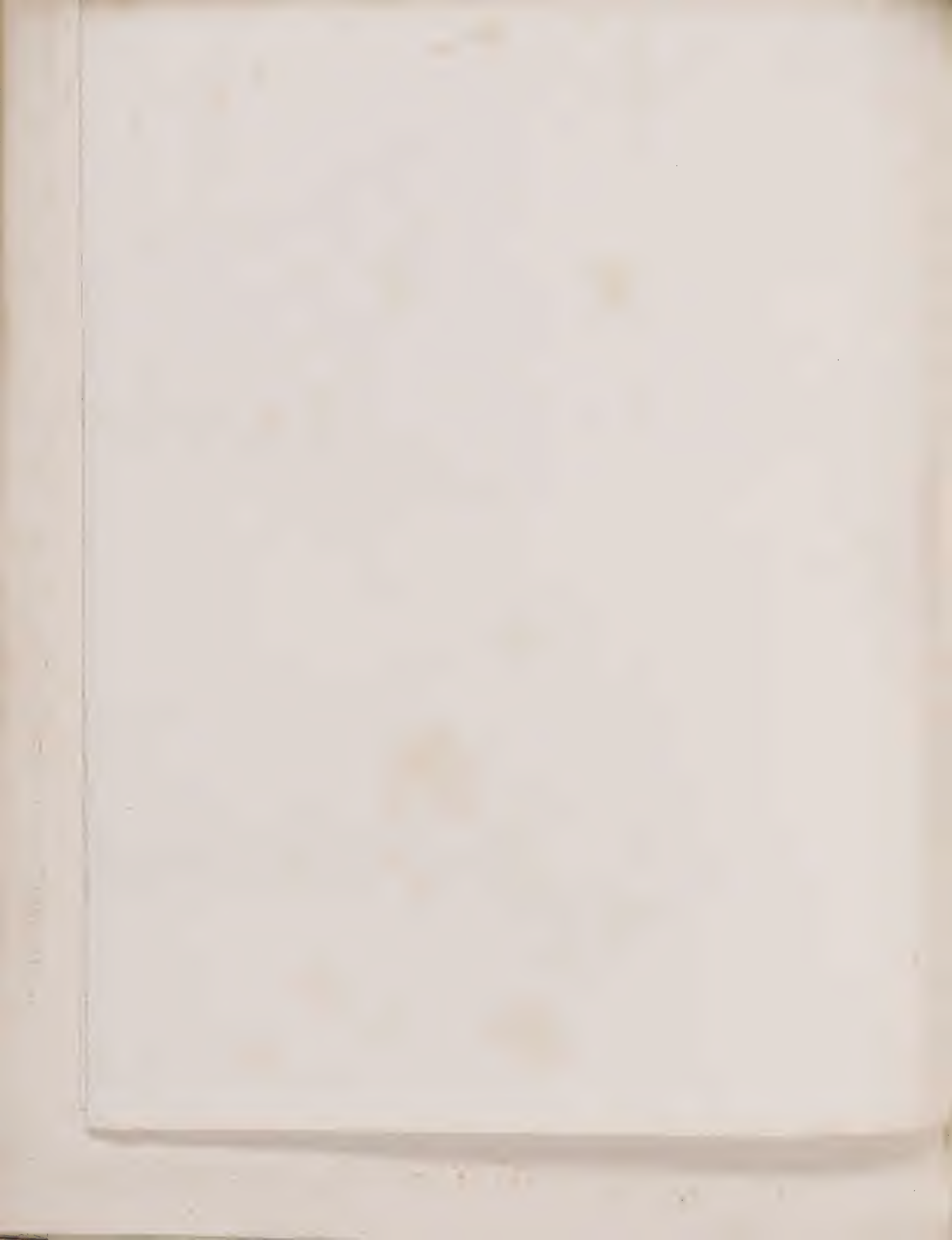


Fig. 1. *Lucernus gracilis*. Fig. 2. *Lucernus struthioideus*.

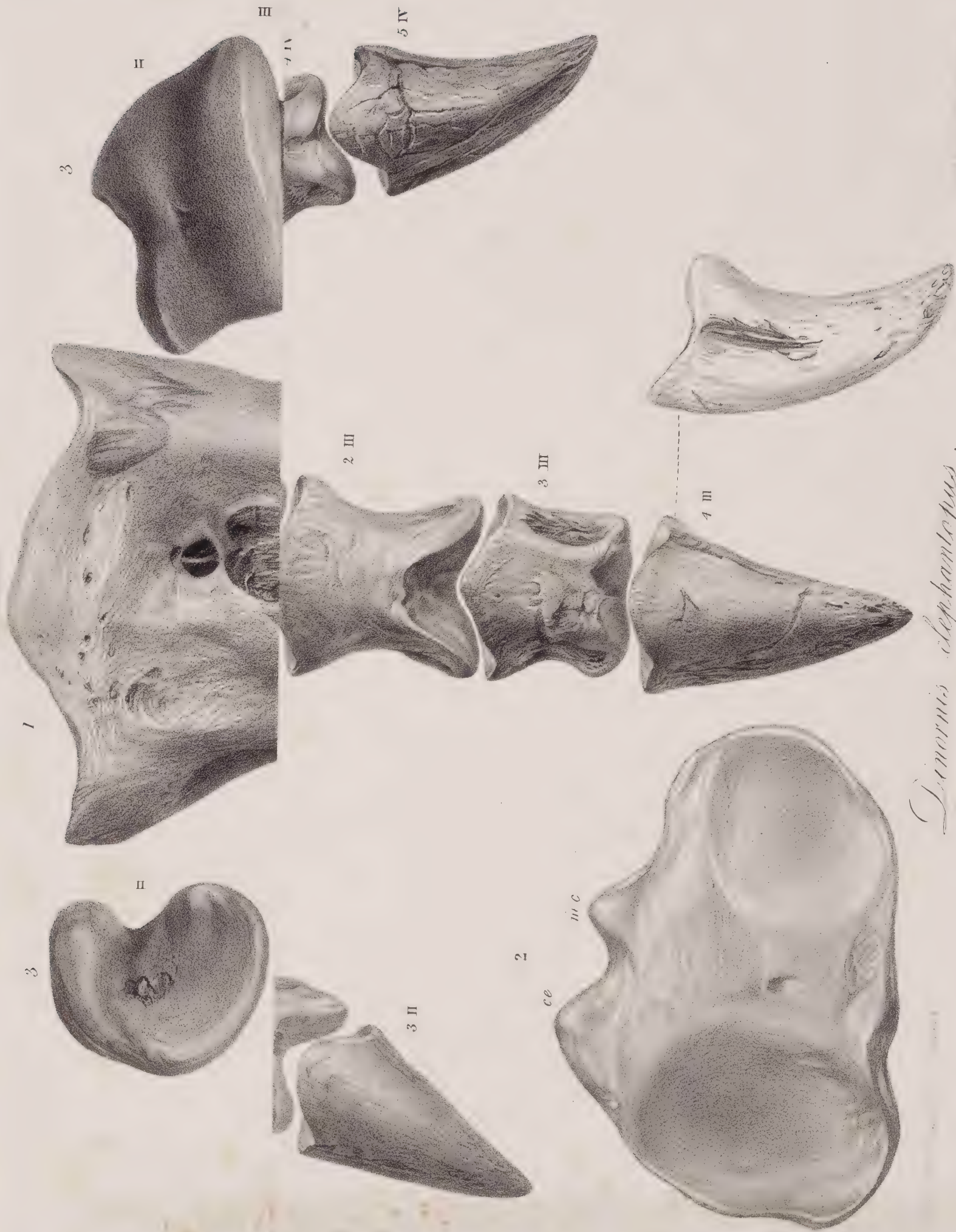


7

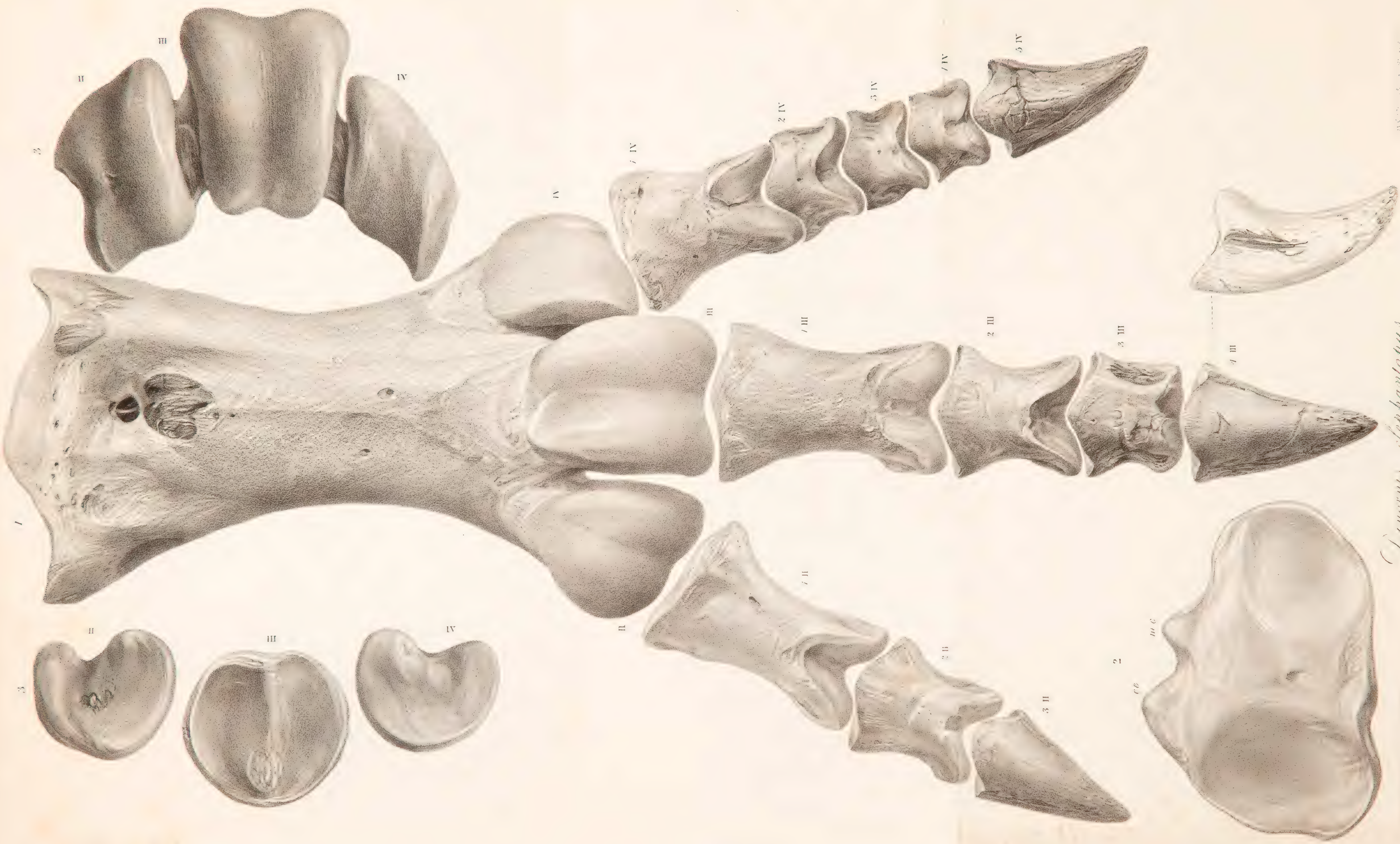








Dinornis elephantopus.



Dinornis elephantopus.

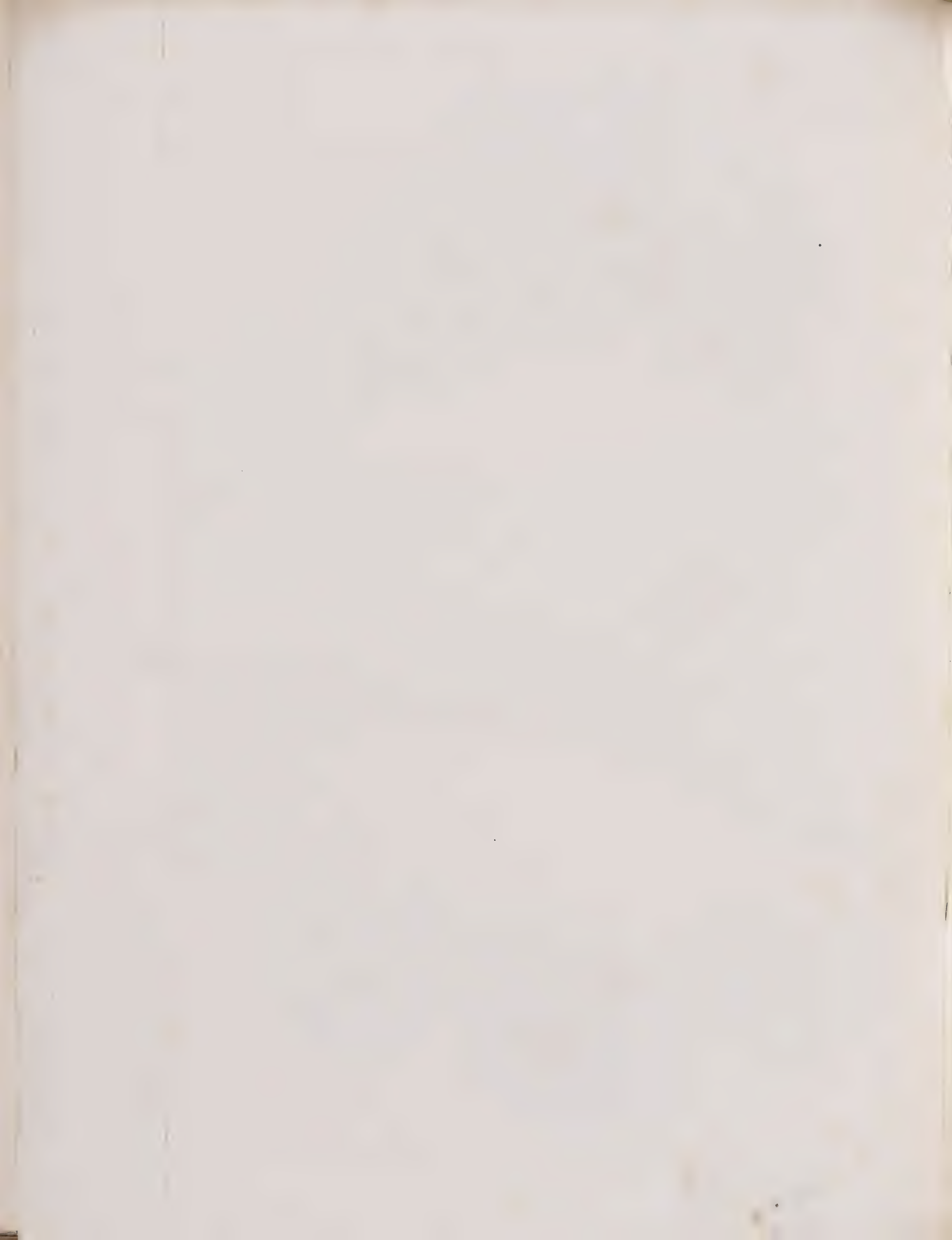


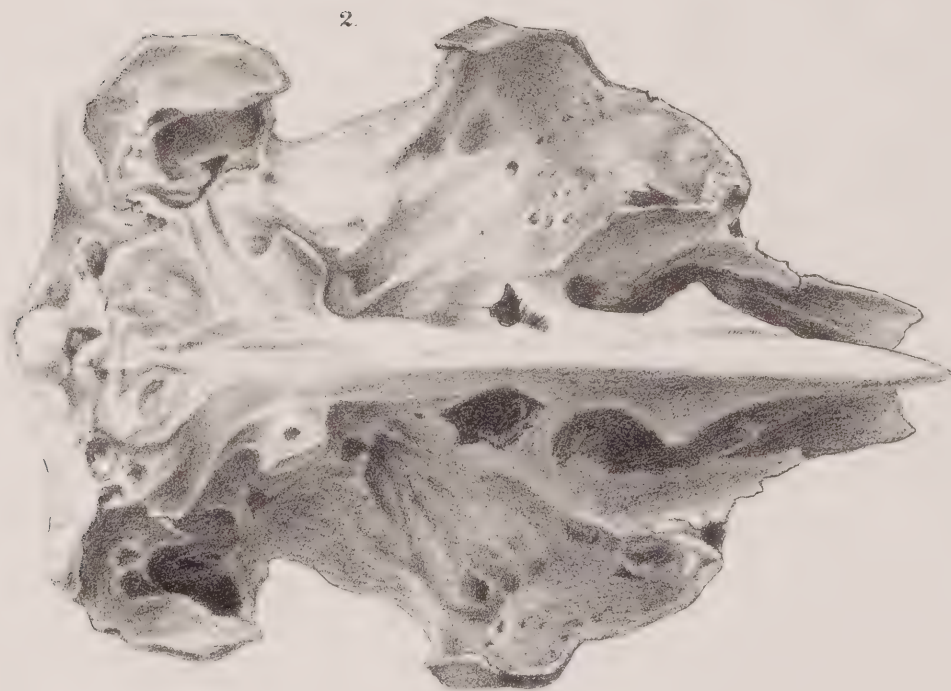
Fig. 2.



a

Fig. 1.

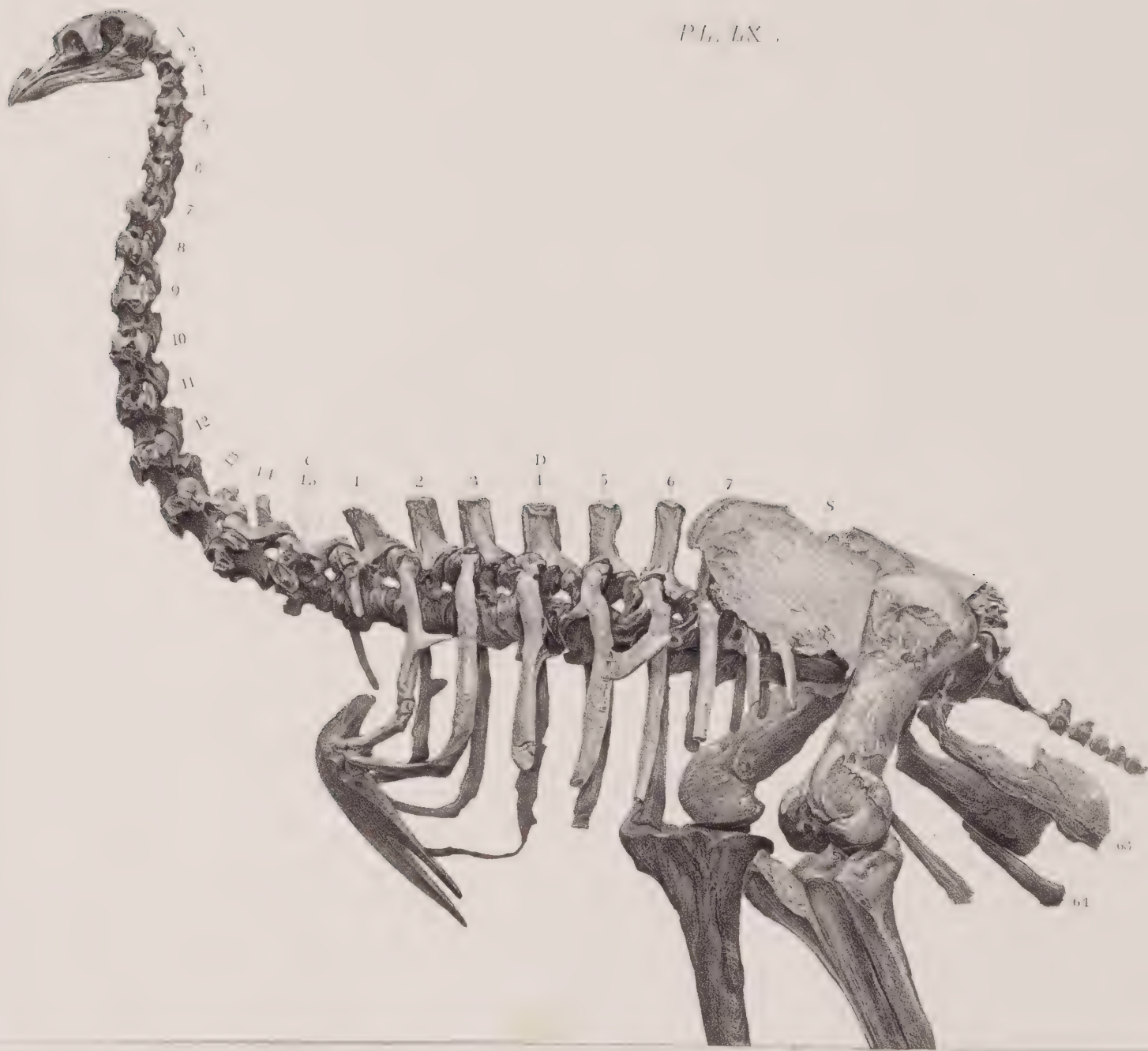


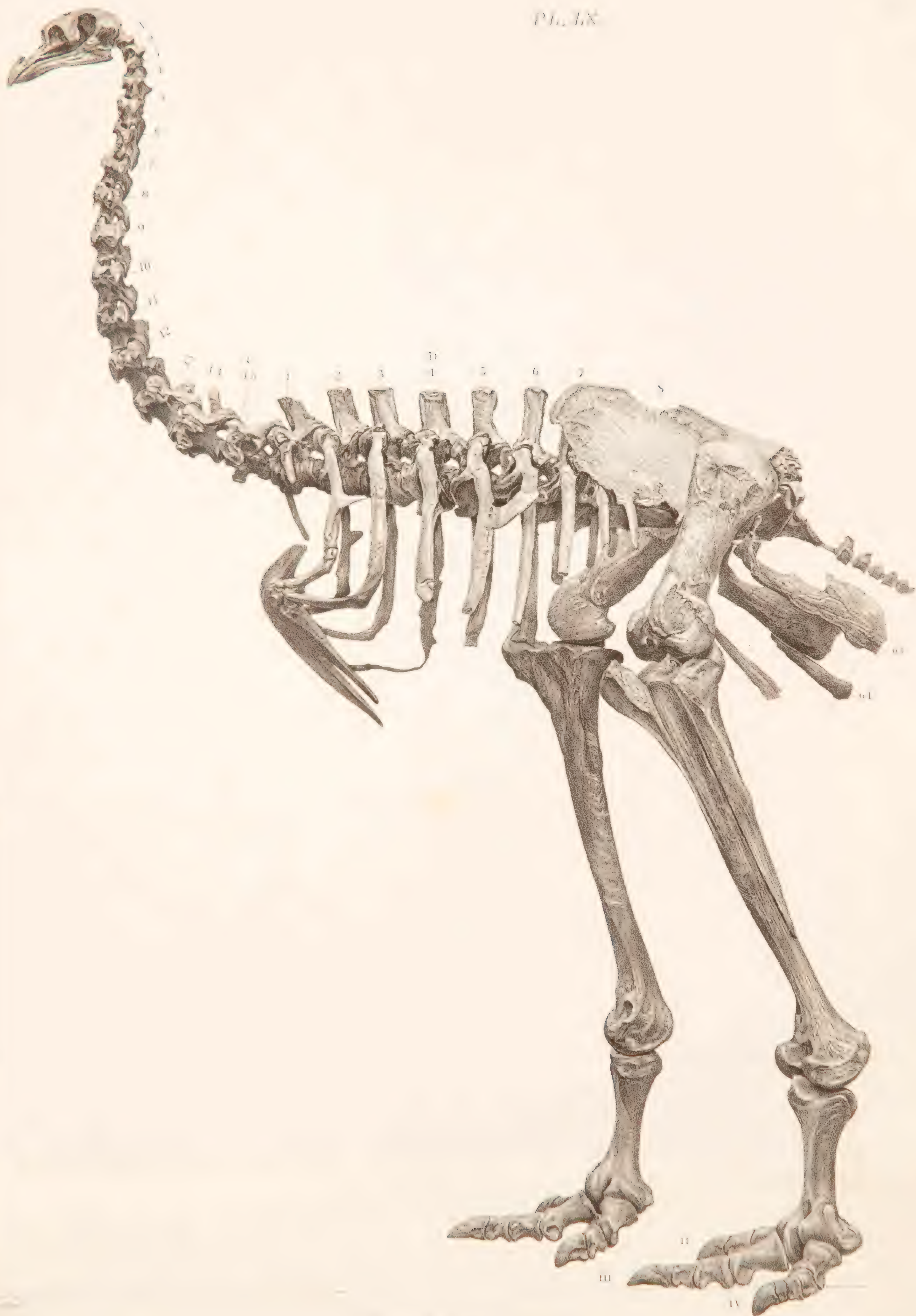


Erleben del H. Oleson lith.

W. West & Co. imp.

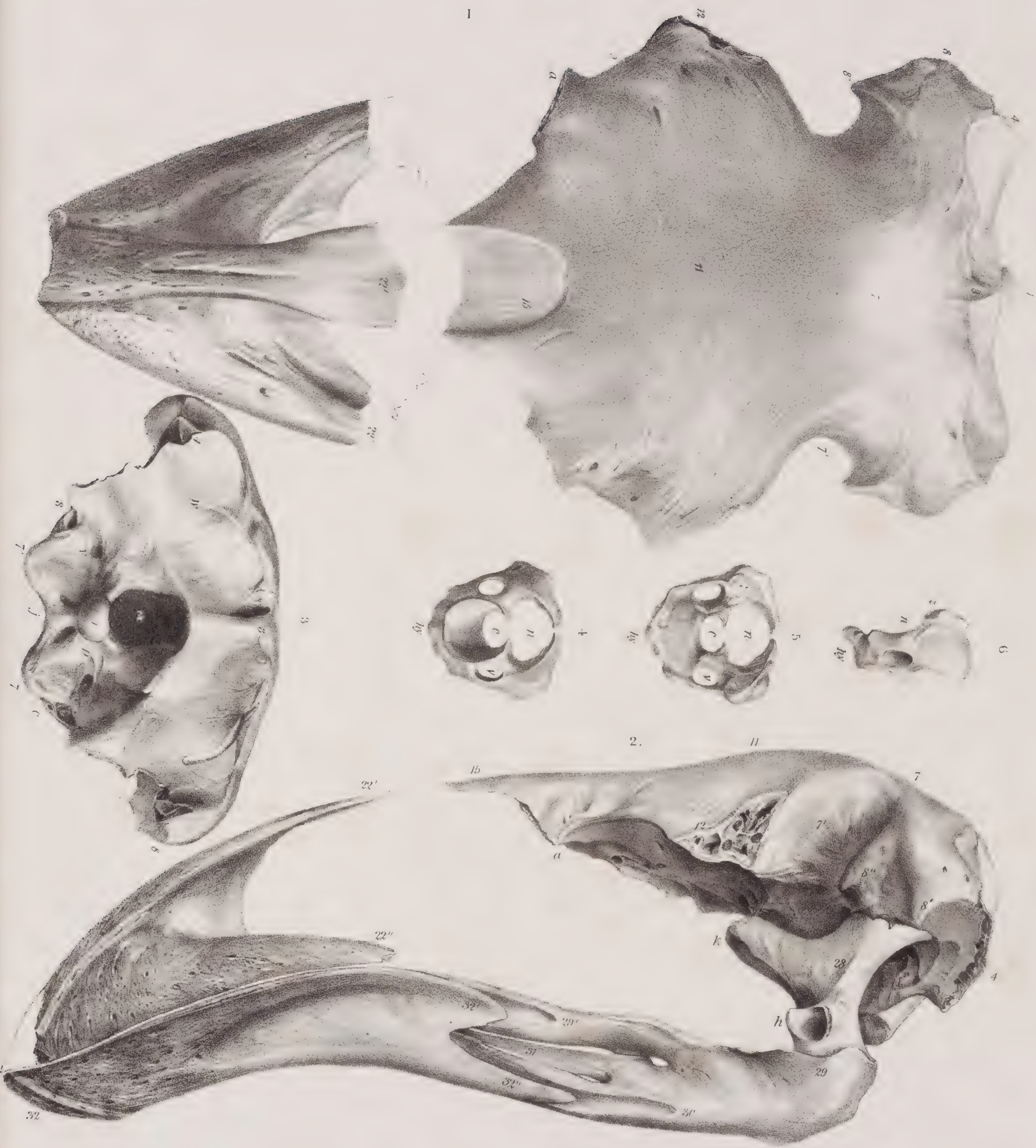
DINORNIS ELEPHANTOPUS, 1. SKULL, 2. BASE OF CRANIUM. 3. FRONT OF D^o







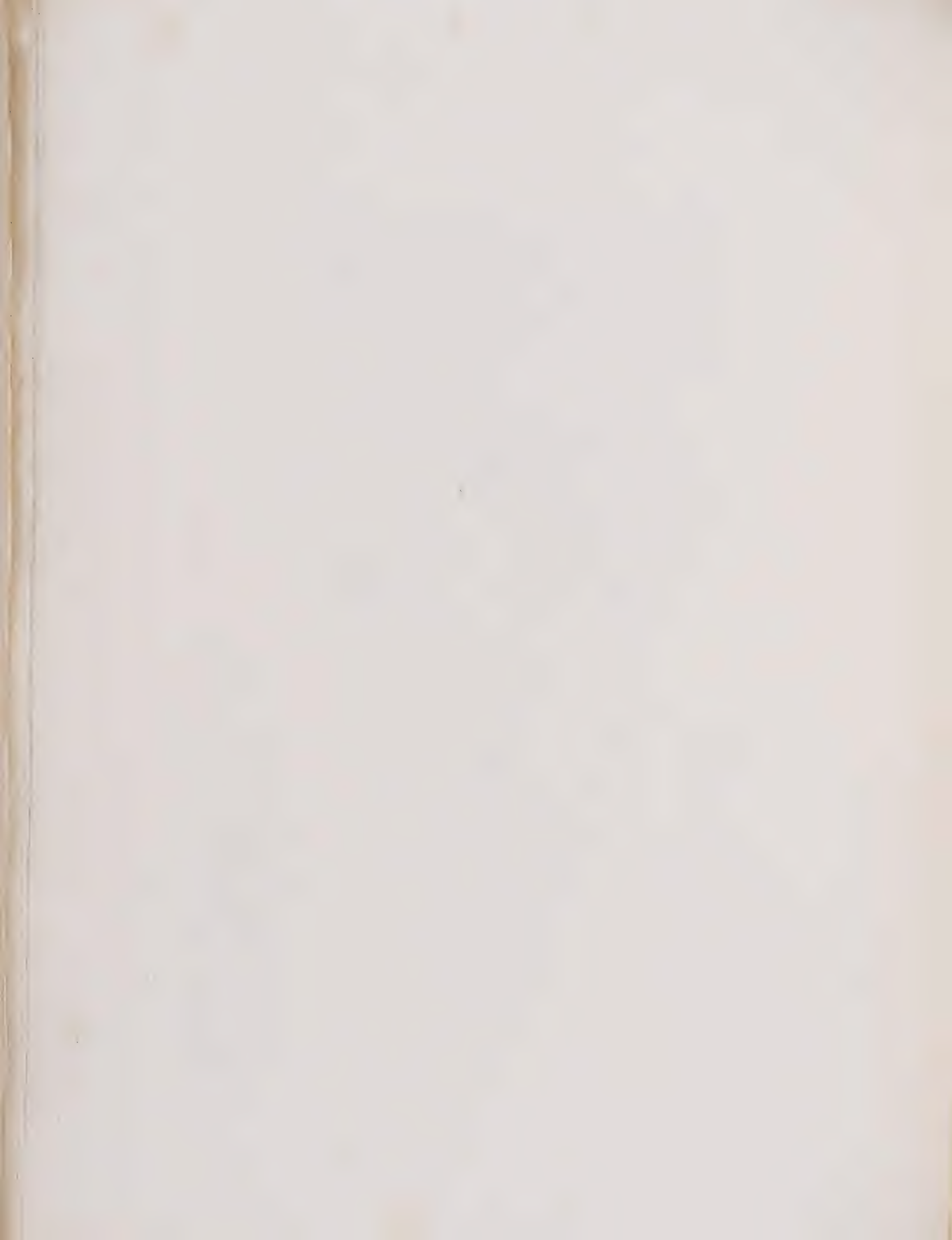








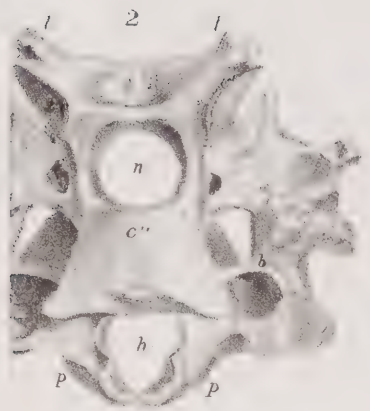


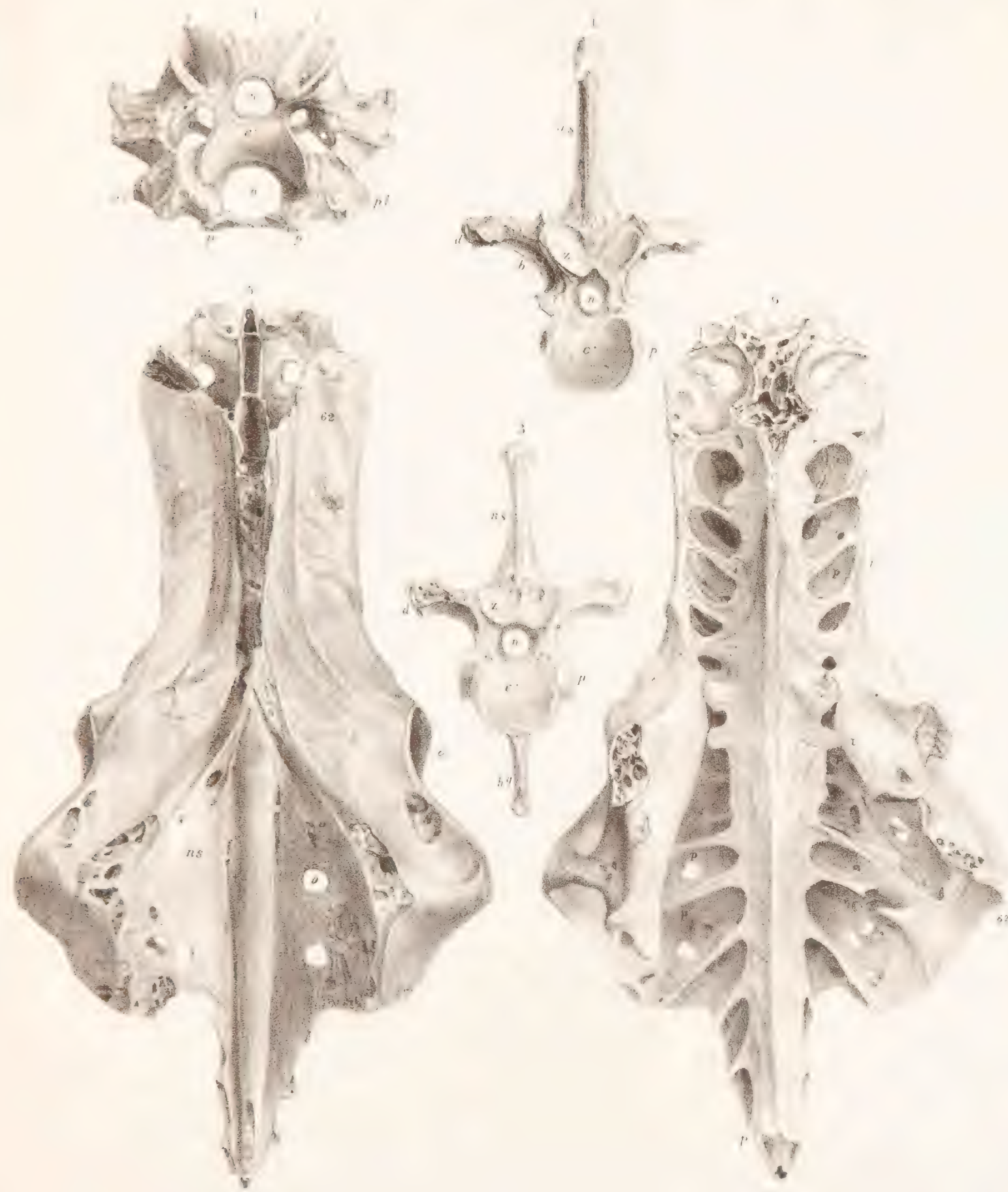




From Nat. on Stone by a Fritichen.

MAN Thompson



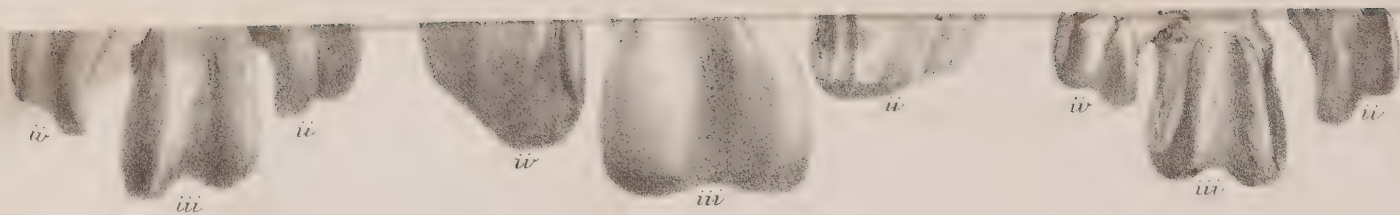




From Nature on Stone by J. Verreaux

1 2. CNEMIORNIS 3 4. APTORNIS 5 6. CERANOIDES

Day & Son Limited Lith London



From Nat. on Stone by J. Huxley

M. N. Hanhart imp.

1. 4. CNEMIDORNIS. 1. 6. DIIDONIS GERANOÏDES.





3

2



1858. Set on Stone by A. F. Smith.

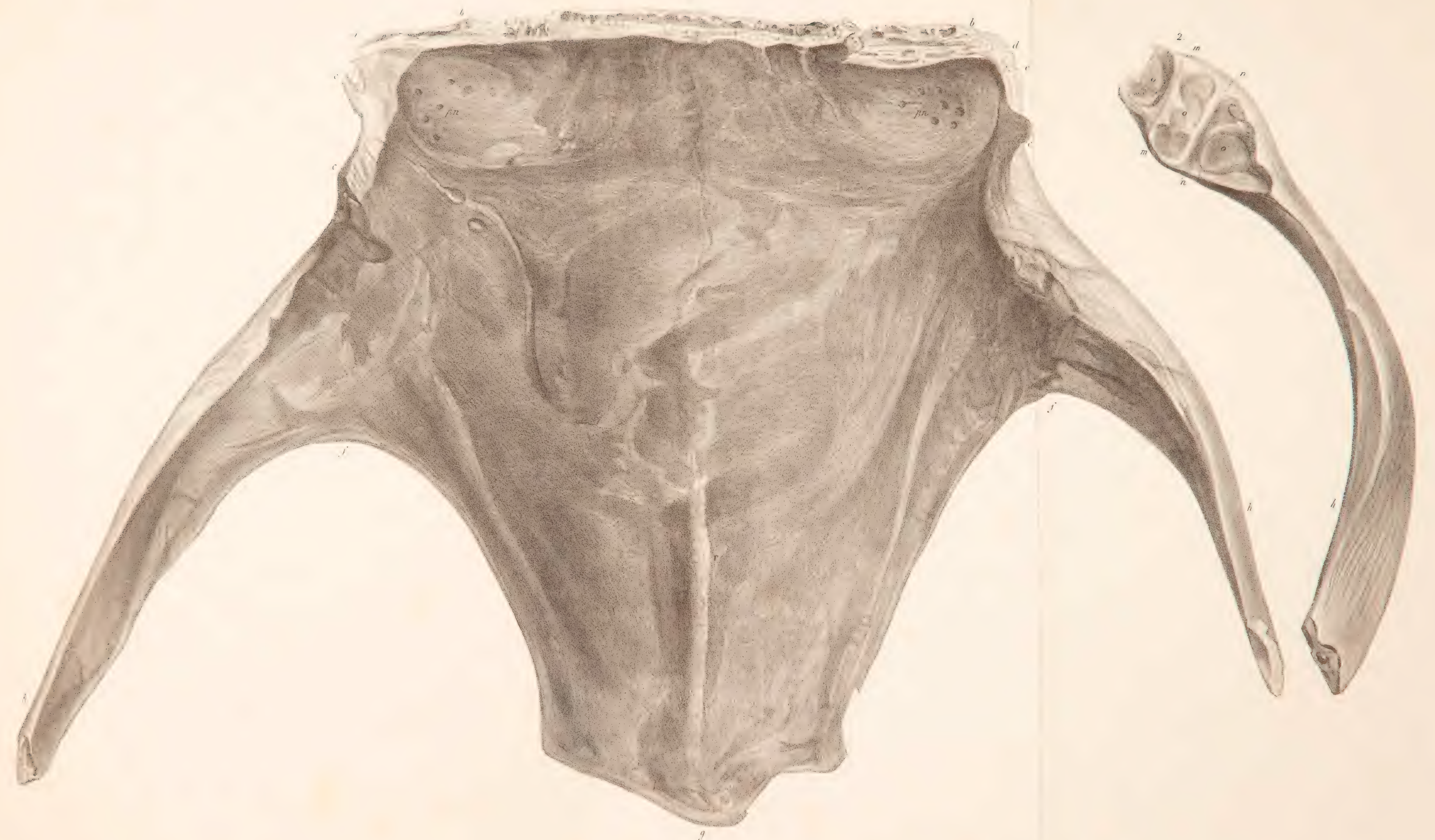
M. & N. Hankart imp.

DINORNIS ROBUSTUS



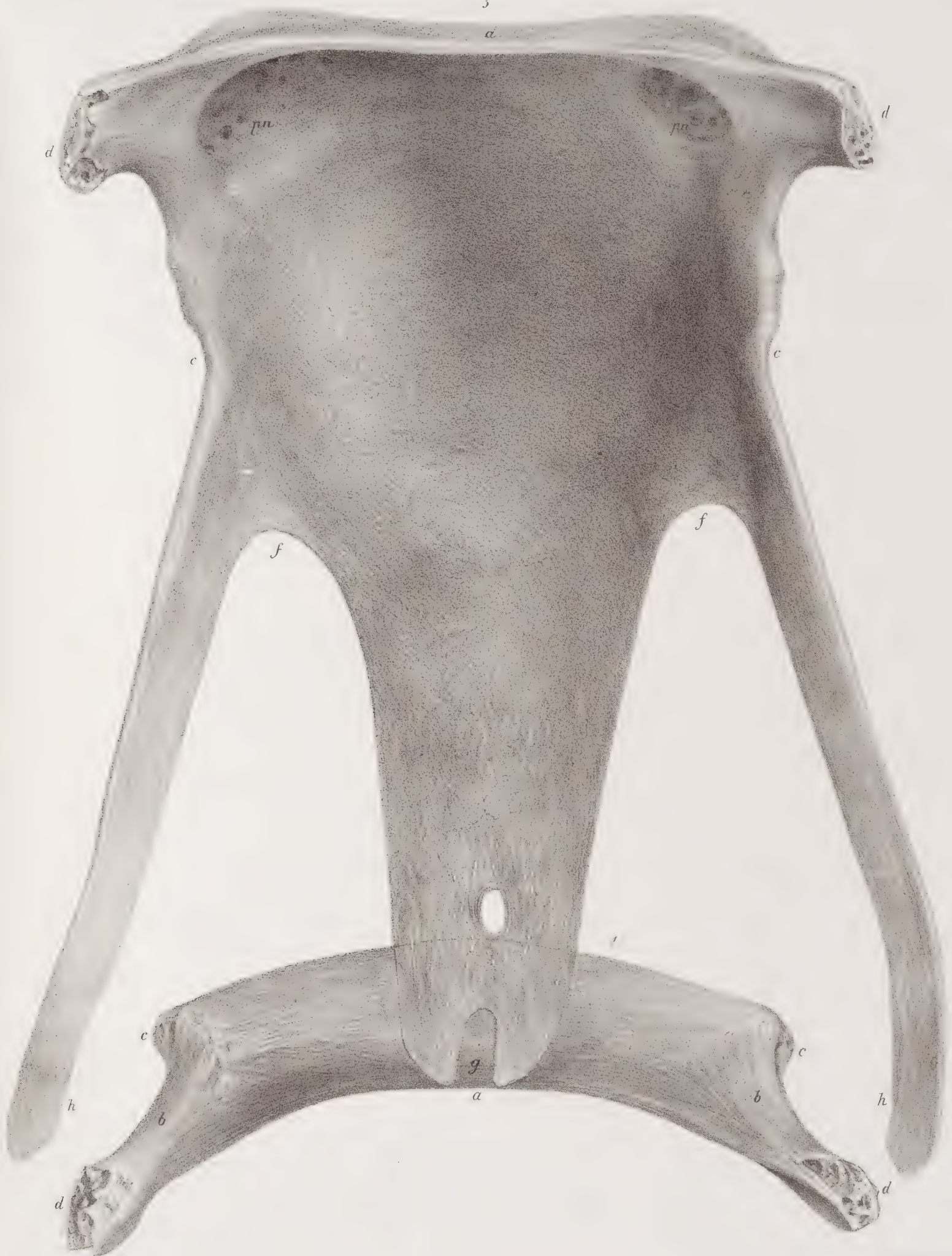
PL. LXXII.

1.



ZOOTENIA LEUCOPHANTA.





From nature on stone by J. Euxleben

M & N Hanhart imp

DINORNIS RHEIDES.



Smit del et lith

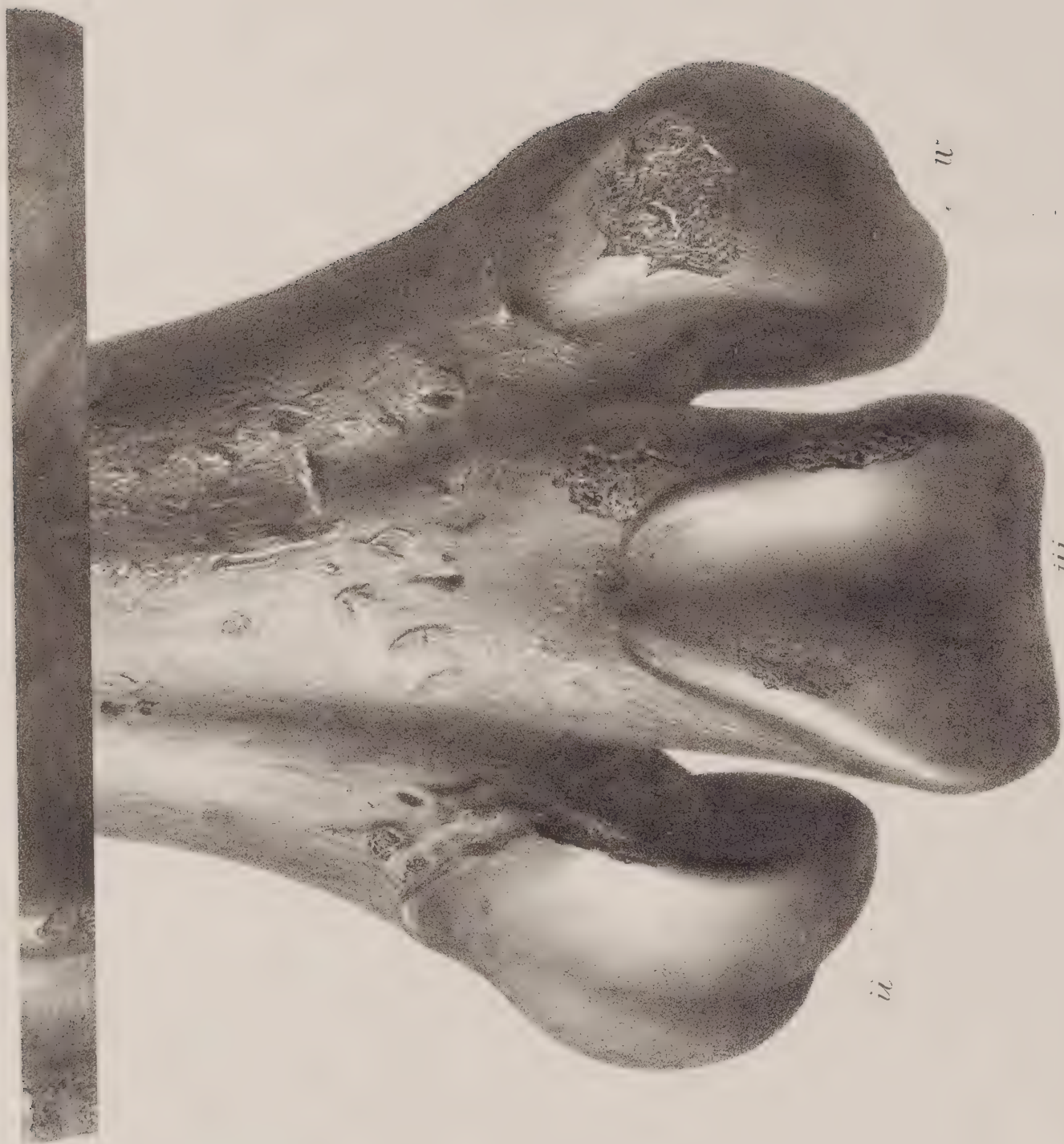
M & N Handart. cmj





Printed by M & N Hanhart

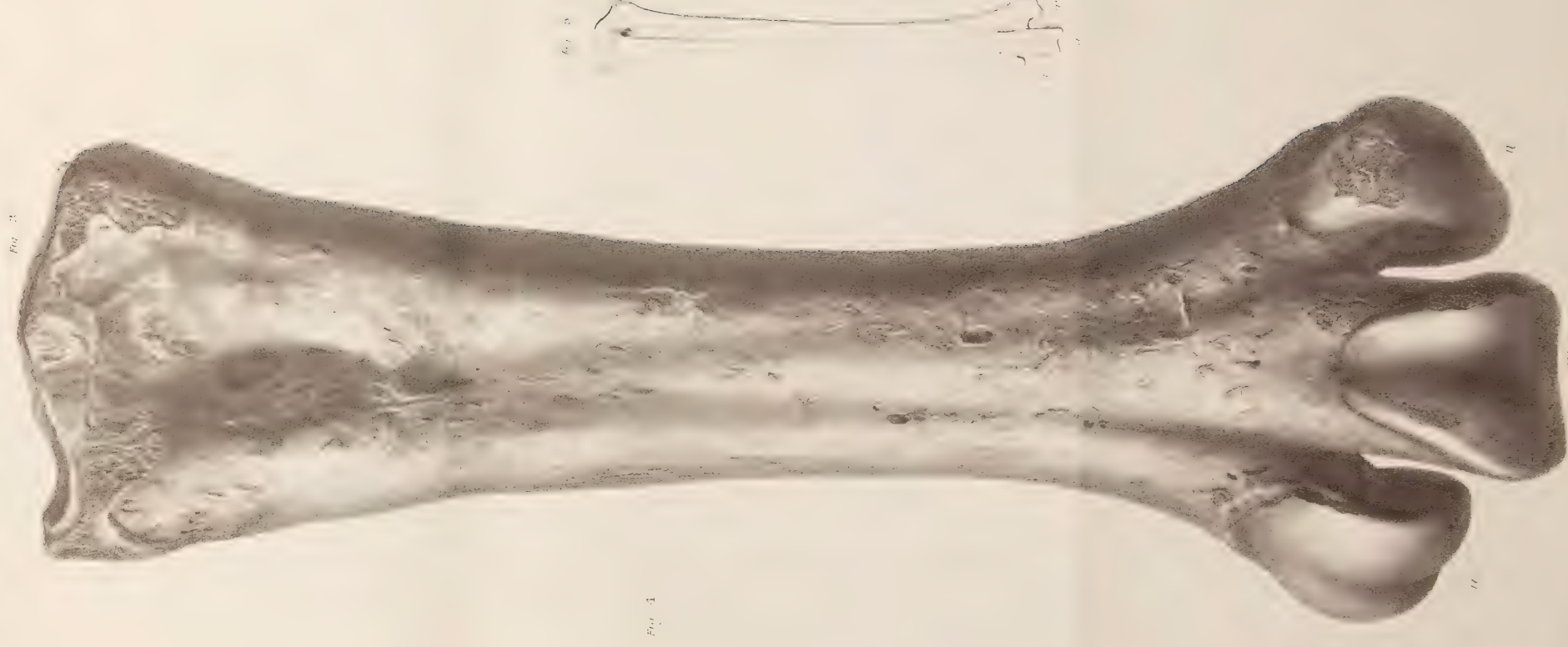


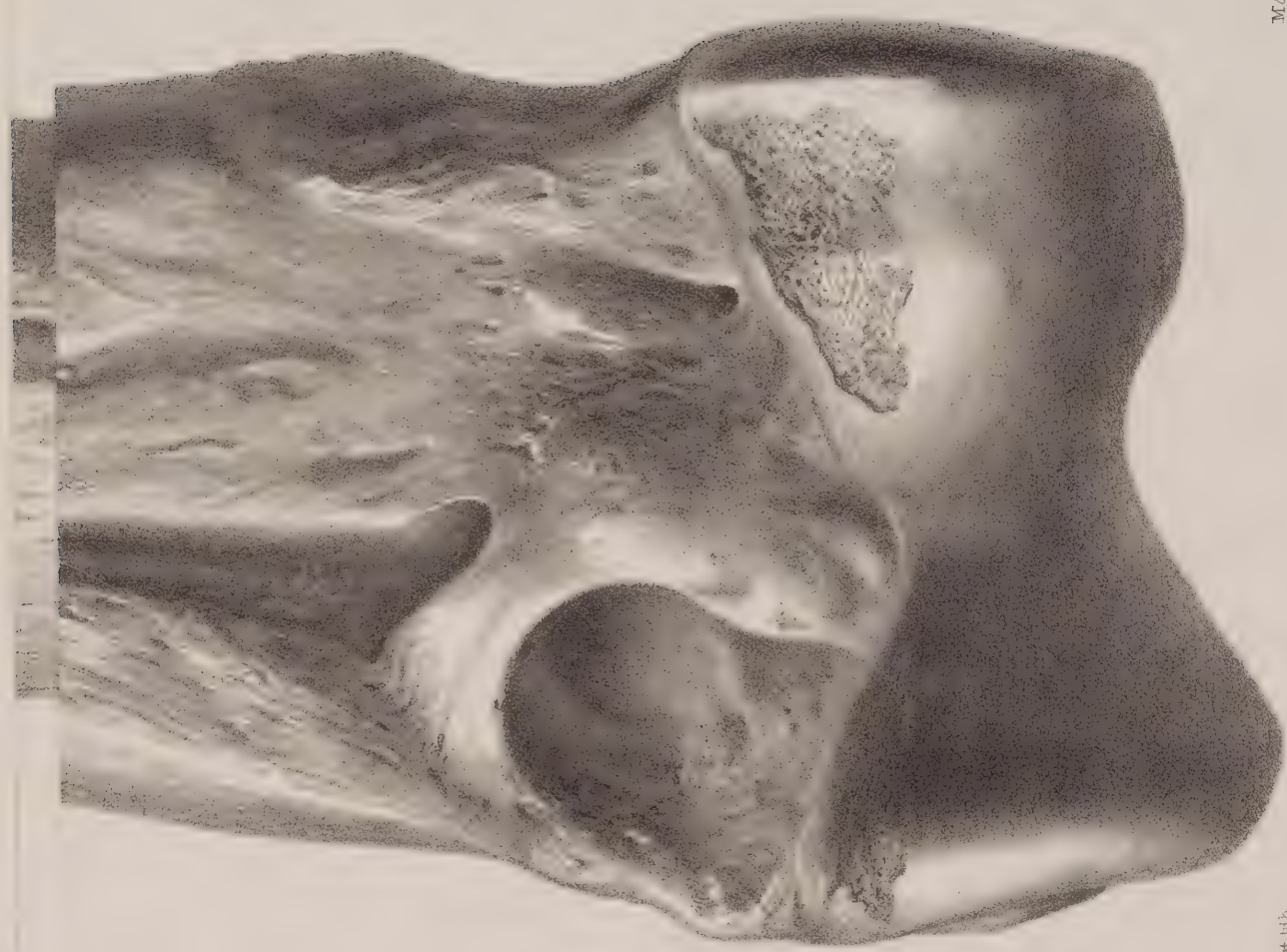


Chicks. x=8 1/2 in.

DINORNIS MAXIMUS.

M & N Hamhart 1910



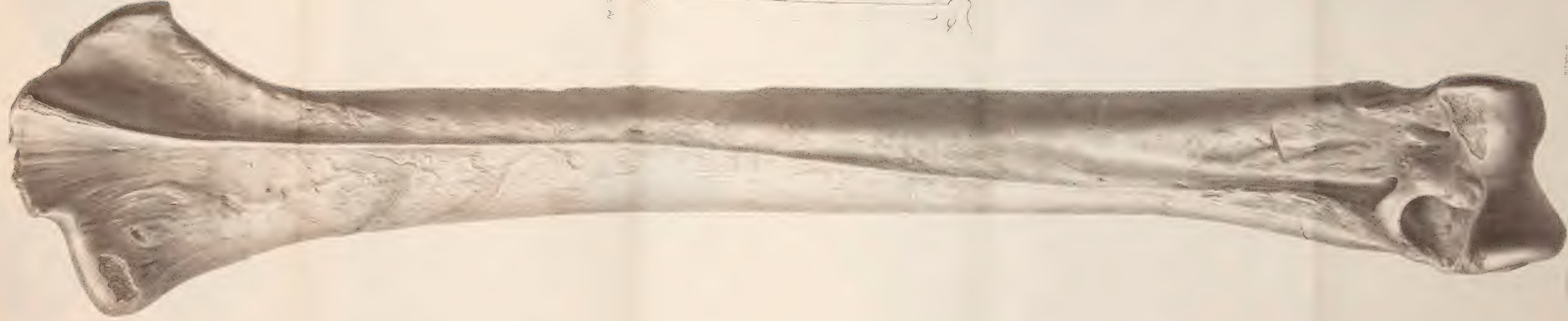


M. N. Harhart imp

DINORNIS MAXIMUS.

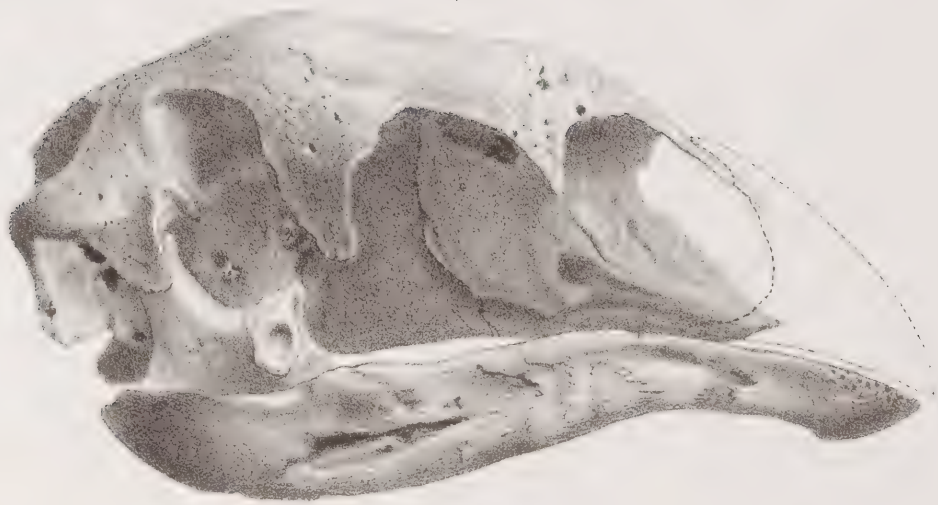
Dinkel del et lith

✓



p
q

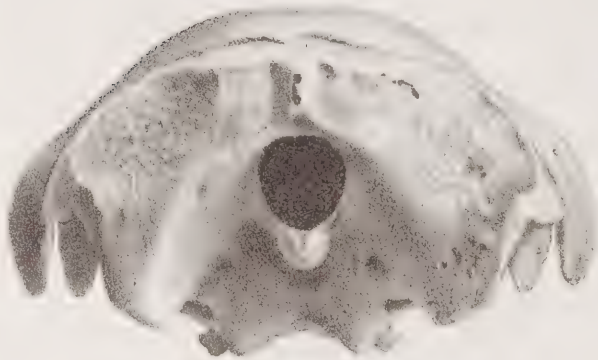
1



6



2



5



4



3









From nat. on stone by J. E. Debevoise

Printed by M. M. W. W. W.





From nat. on stone by J. E. Leiden

APTORNIS DELESSOR.

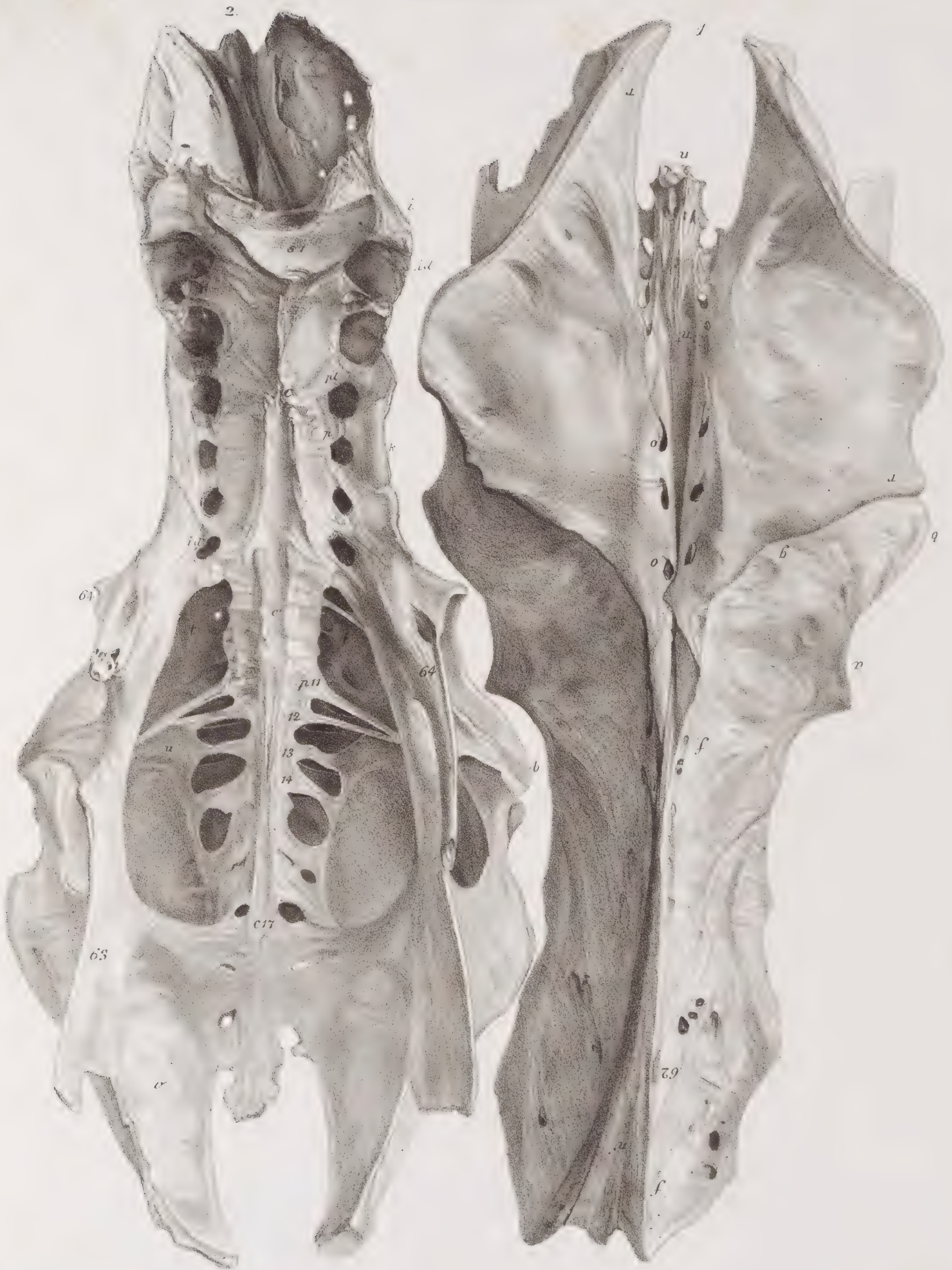
Printed by M. & N. Barham.



From nat. on stone by J. Erxleben.

Printed by M & N. Harbhart.

1. 5. APTORNIS DEFOSSOR. 6. APTORNIS OTIDIFORMIS, 7. 10. DINORNIS CURTUS







COMPARATIVE DIMENSIONS OF EGGS OF DINORNIS ELEPHANTOPUS & STRUTHIO CAMELUS.

Fig. 1.

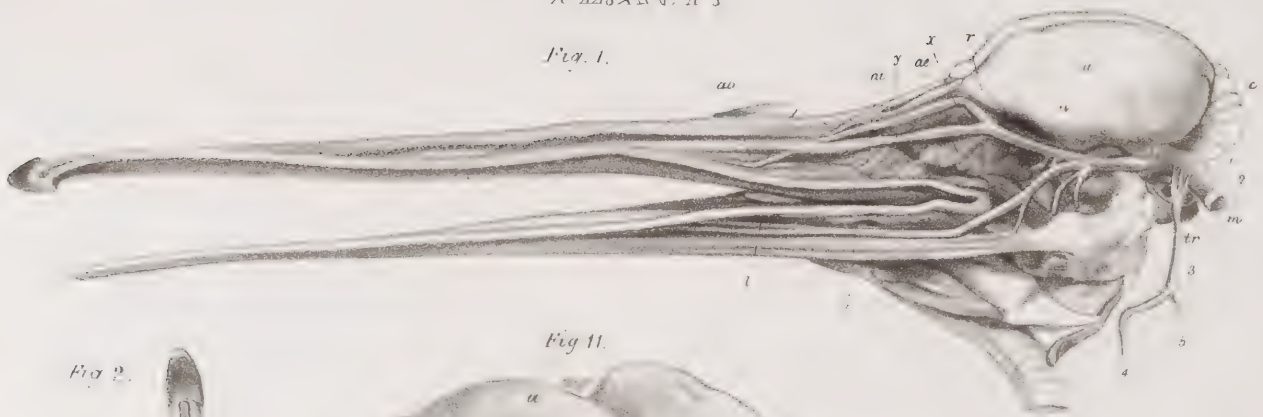


Fig. 2.

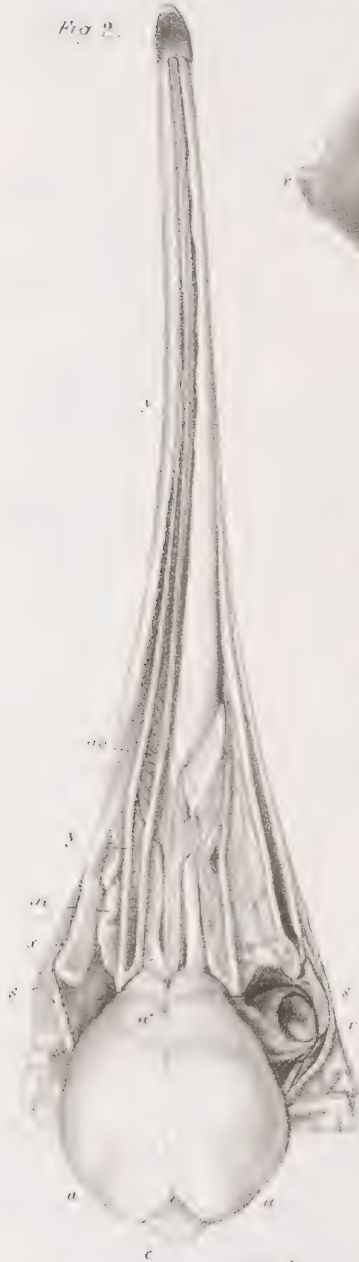


Fig. 11.

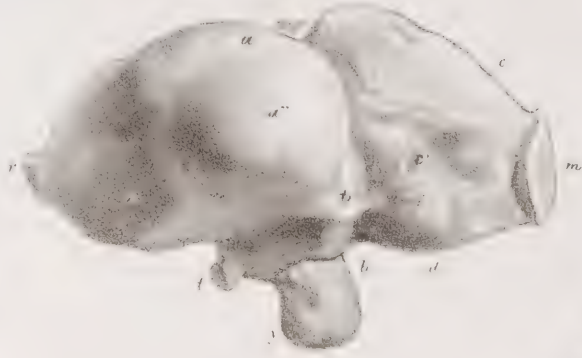


Fig. 5.

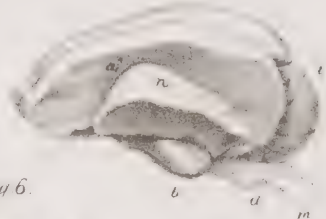


Fig. 6.

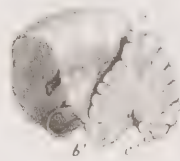


Fig. 7.

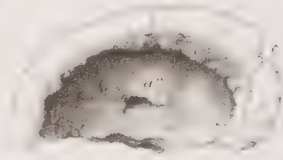


Fig. 8.

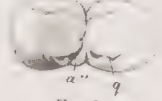


Fig. 9.

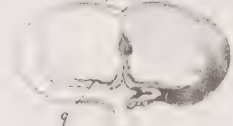


Fig. 10.

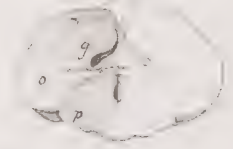


Fig. 13.



Fig. 4.

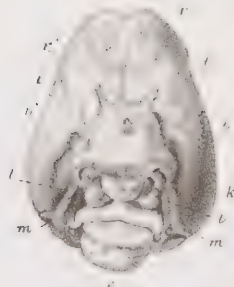


Fig. 3.



Fig. 1.

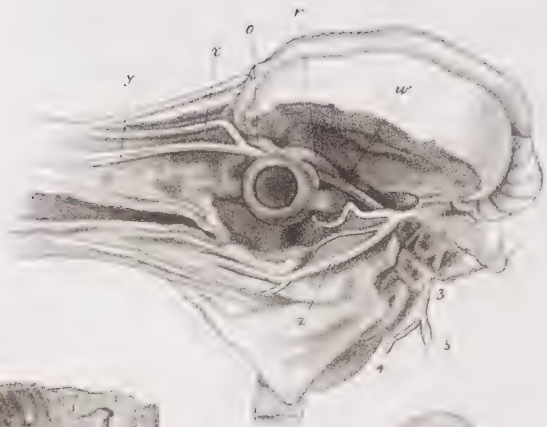


Fig. 2.

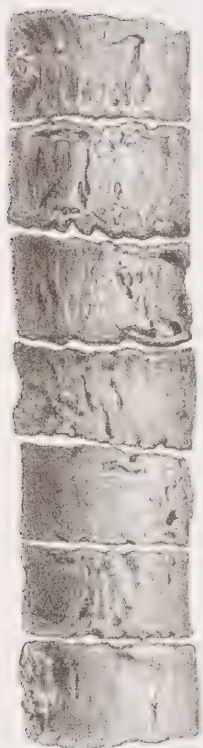
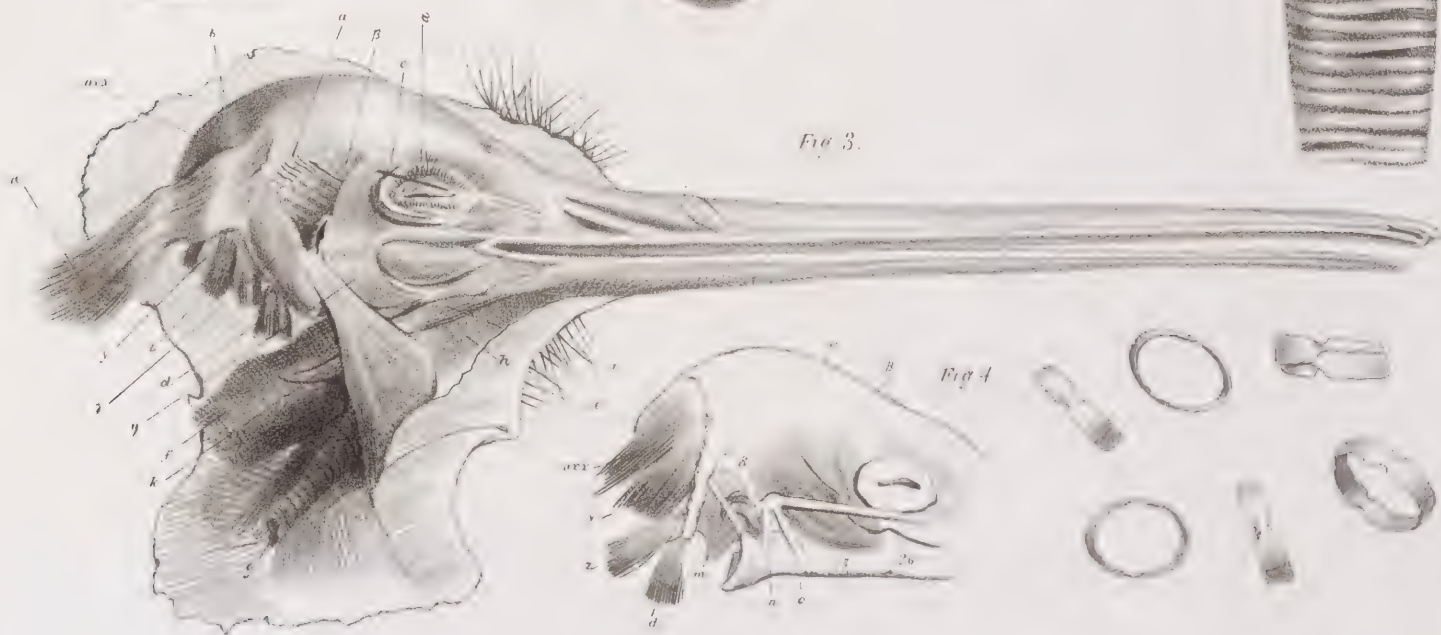


Fig. 3.





From nat. on Stone by J. Erxleben.

M&N Hanhart. imp.



R. Owen del. J. Exley lith.

M. & N. Hanhart. imp.

1. *APTORNIS DEFOSSOR*. 2. *OCYDROMUS AUSTRALIS*



R.O. del. Griesbach lith.

Mintern Bros. imp.

1 CNEMIORNIS CALCITRANS. 2 CEREOPSIS NOVAE HOLLANDIAE.



R. Owen del. on stone by J. E. Leach.

M. & N. Hanhart imp.

DINORNIS ROBUSTUS.

PL. XCVII.





PL. XXV.



FIG. 1. DIPSOSAURUS MAXIMUS. FIG. 2. EGG OF ADRIANUS AUSTRALIS.

PL. XXV. 1890.



Fig 117 DROMORNIS AUSTRALIS. Fig 3 DROMORNIS ELEPHANTOPUS On





R.O. del Griesbach lith.

Mintern Bros imp.

Figs. 1, 6, 11, 12, 15, 16, 17. CNEMIORNIS; 2, 3, 7, 9, 13. CEREOPSIS; 4, 5, 8, 10, 14. TACHYERES.



PL. CIV.



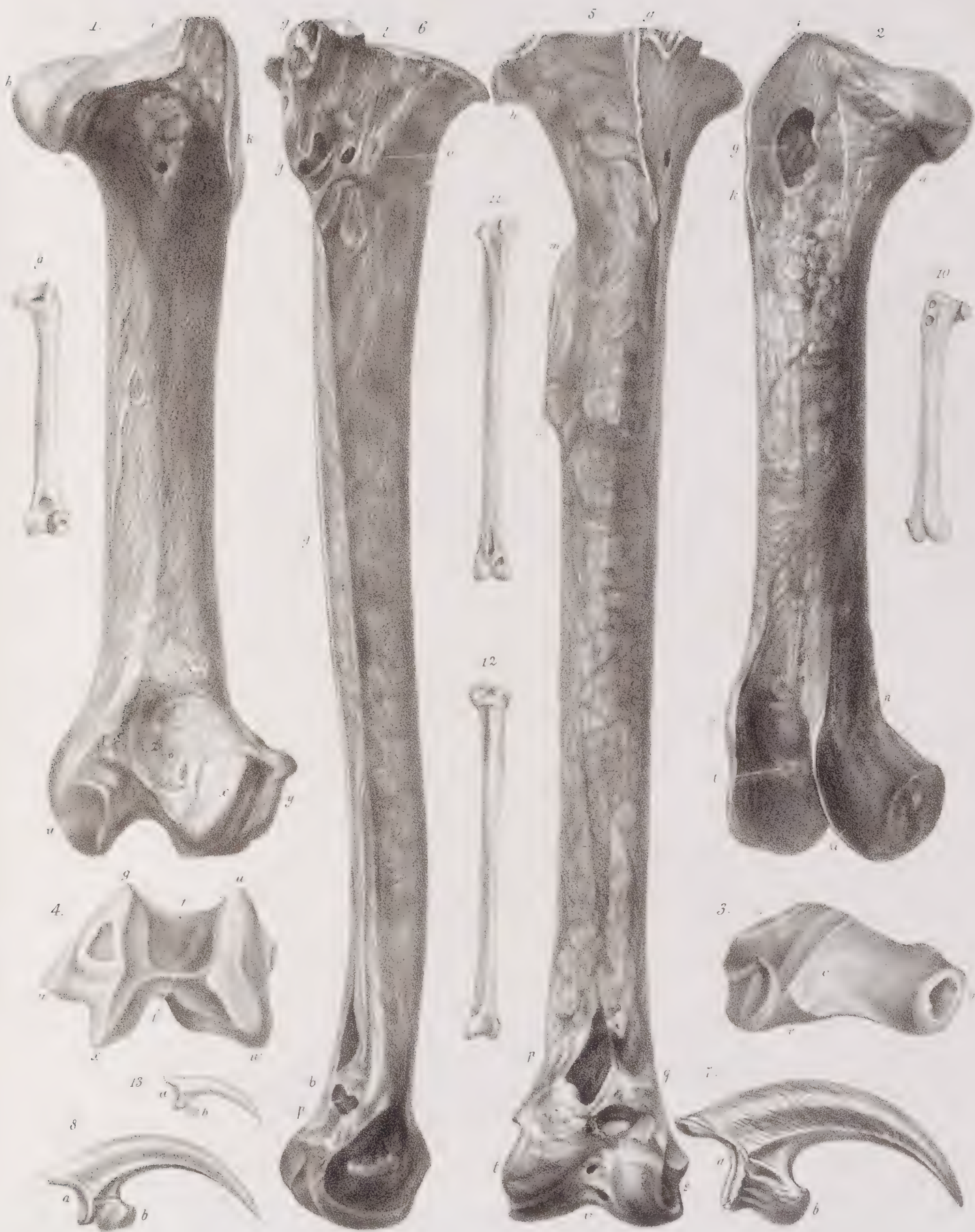
R.O. del. Griesbach lith.

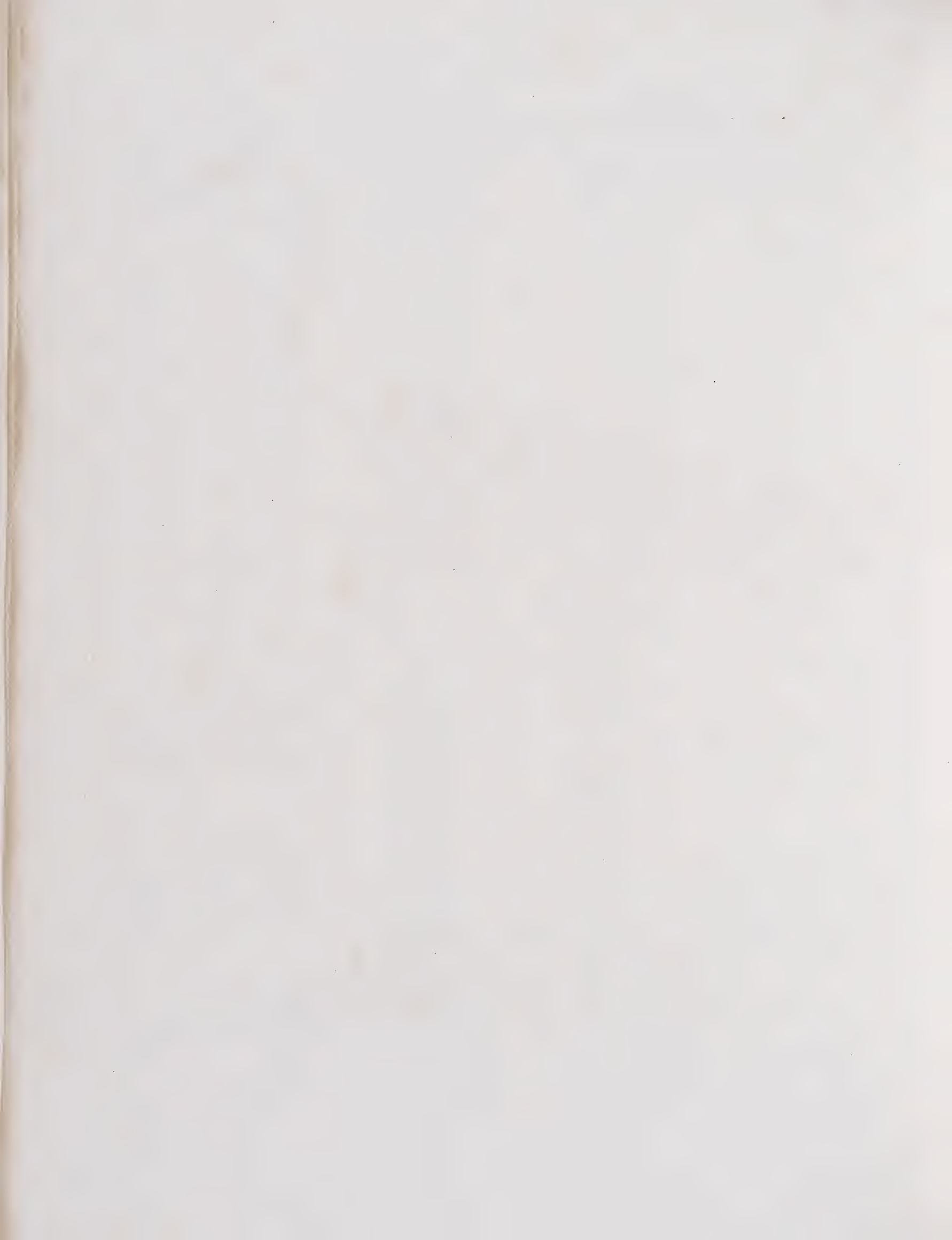
Mintern Bros and

1-12 CNEMIORNIS: 13 CEREOPSIS: 14 TACHYERES.











Stork

Stork

Stork

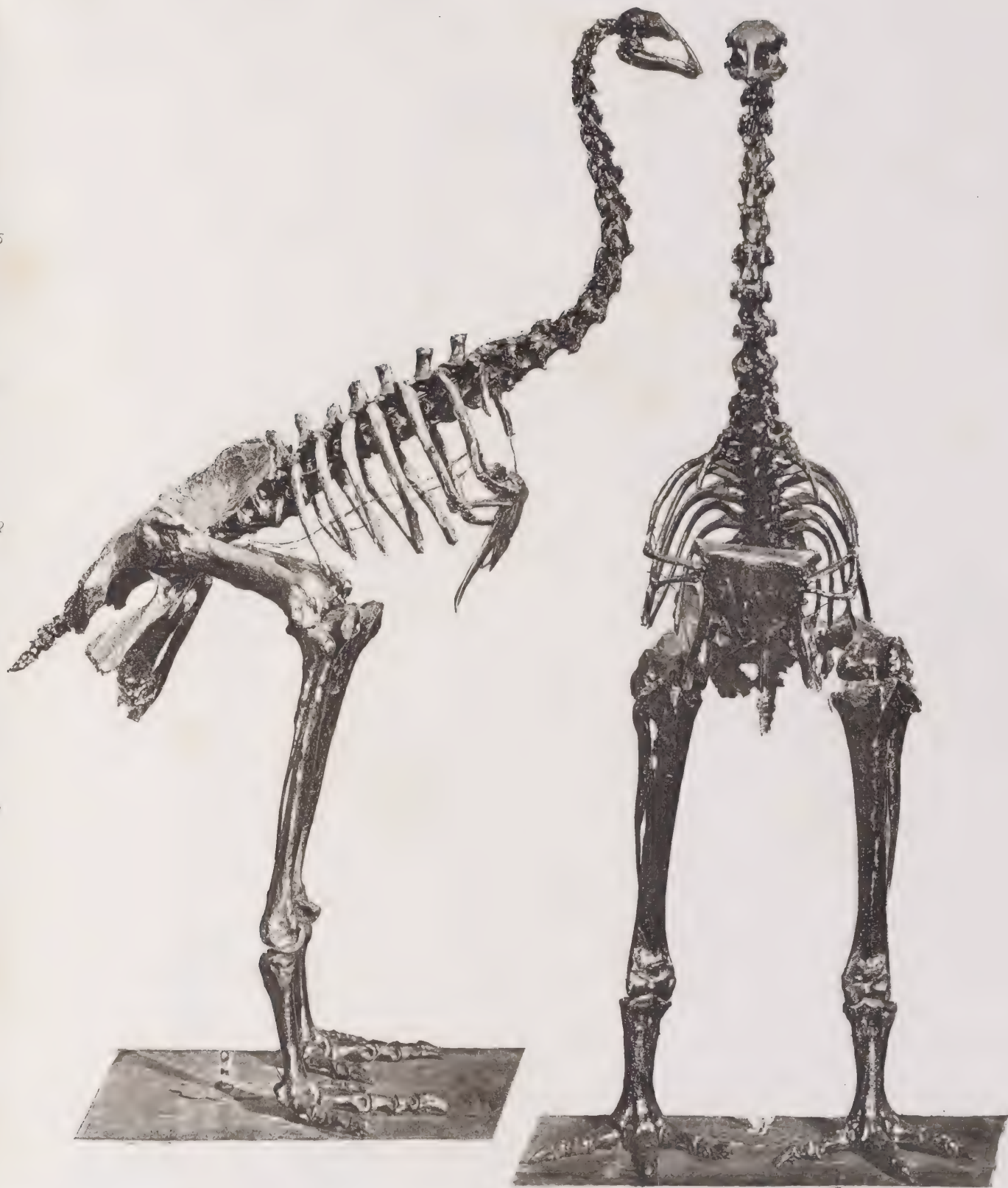




Photo gravure Goupil & C^{ie}

Imp^{re} Goupil & C^{ie}

DINORNIS GRAVIS



DINORNIS DIEMENSIS

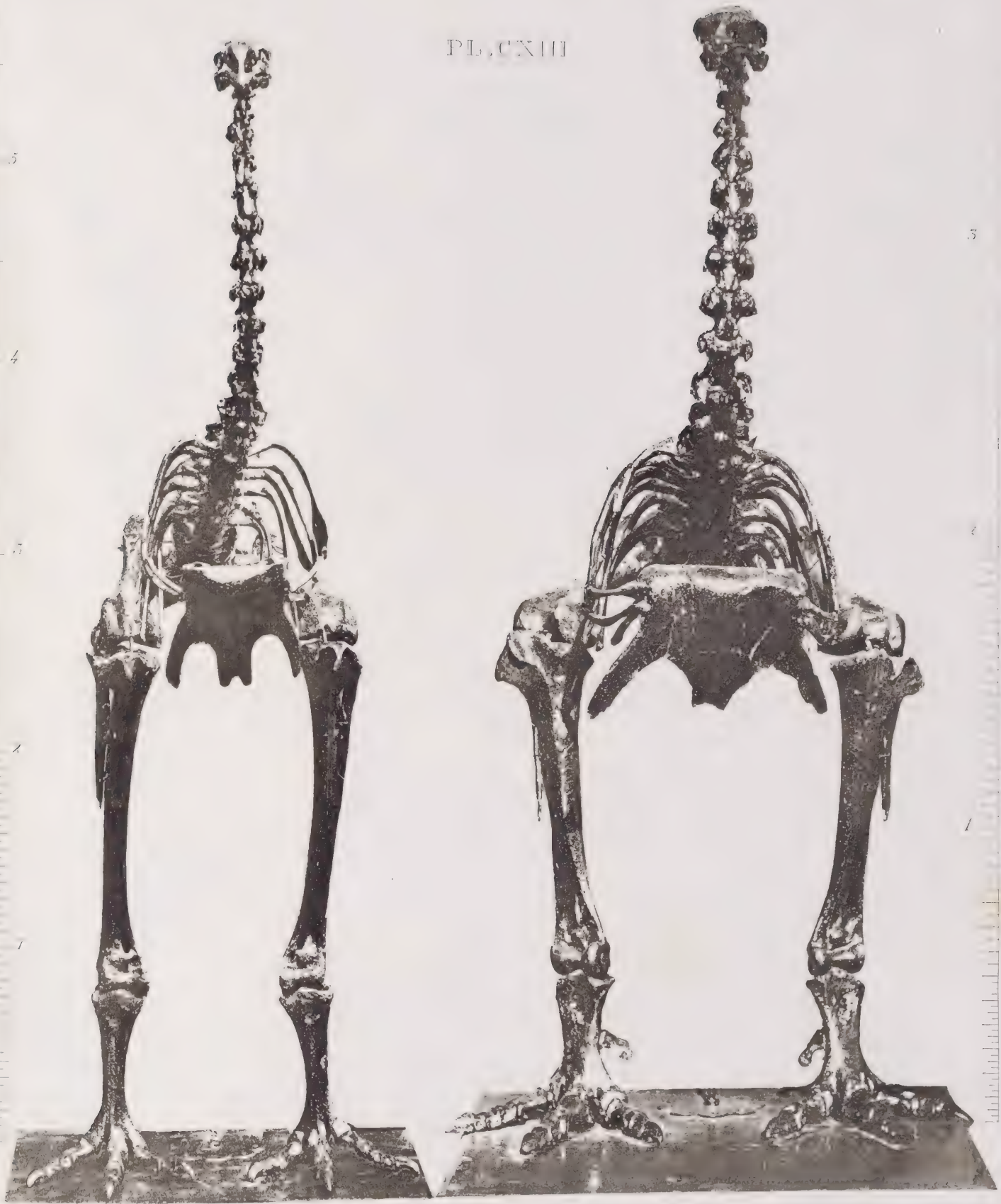


IBIS

IBIS

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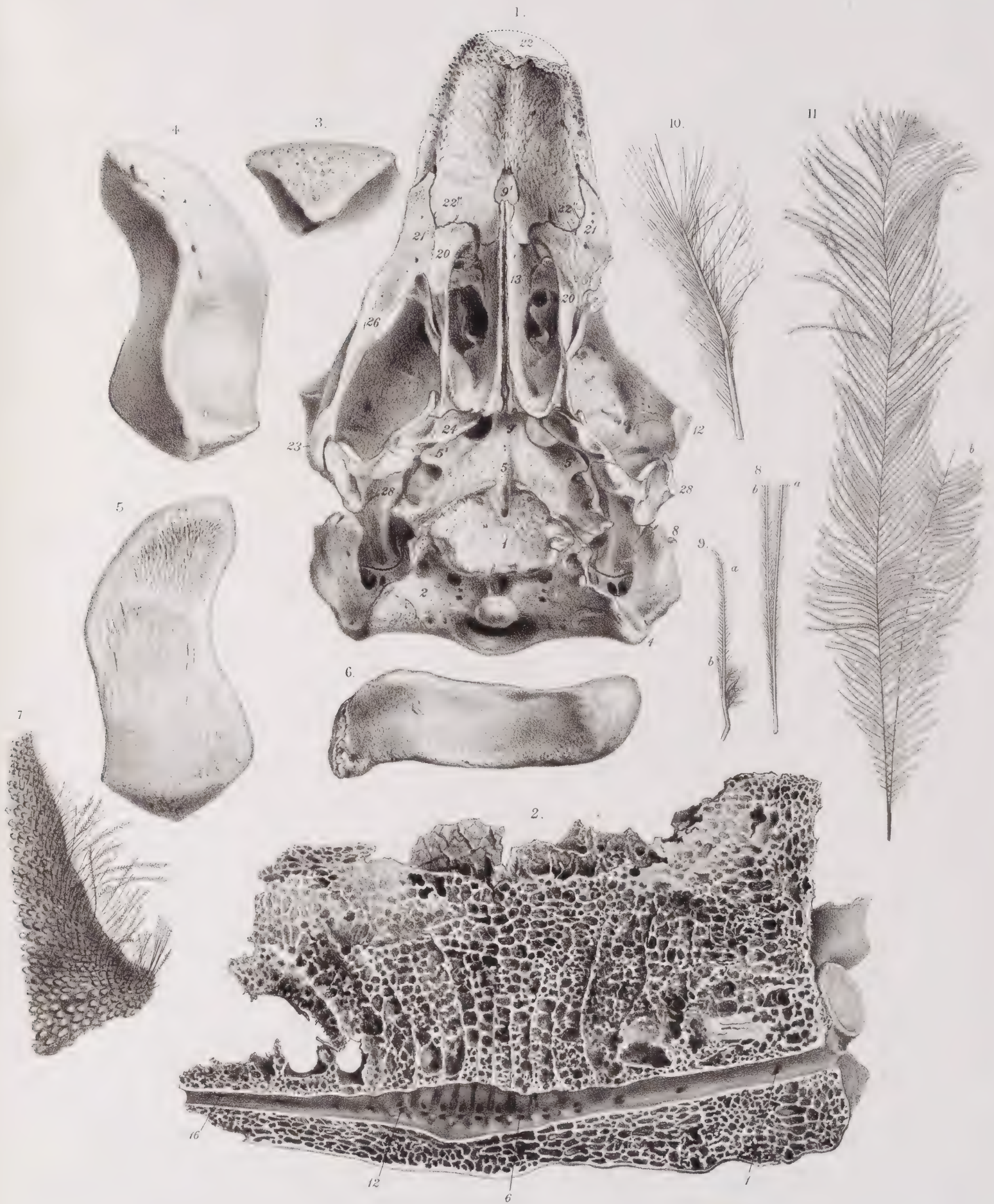
PL. CXIII

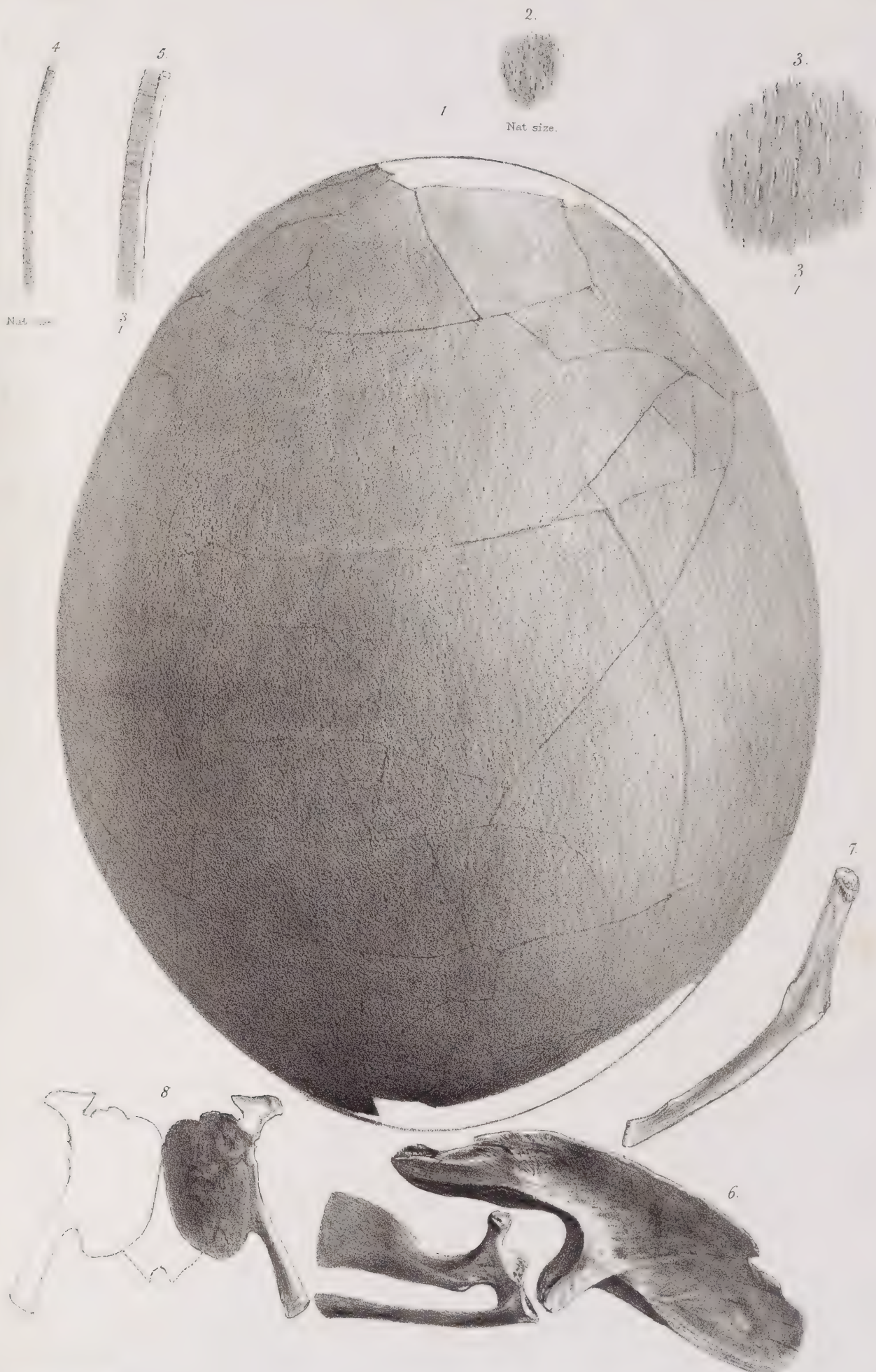


T. TRAVILLA

T. CRASSUS

T. CRASSUS





J. J. Reichen del et lit.

M & N. Hanhart imp

EGG OF DINORNIS CRASSUS.



J. Erxleben del. et lith.

M. J. de la Roche sculp.



$\frac{3}{1}$
Nat. size

$\frac{3}{1}$
Nat. size

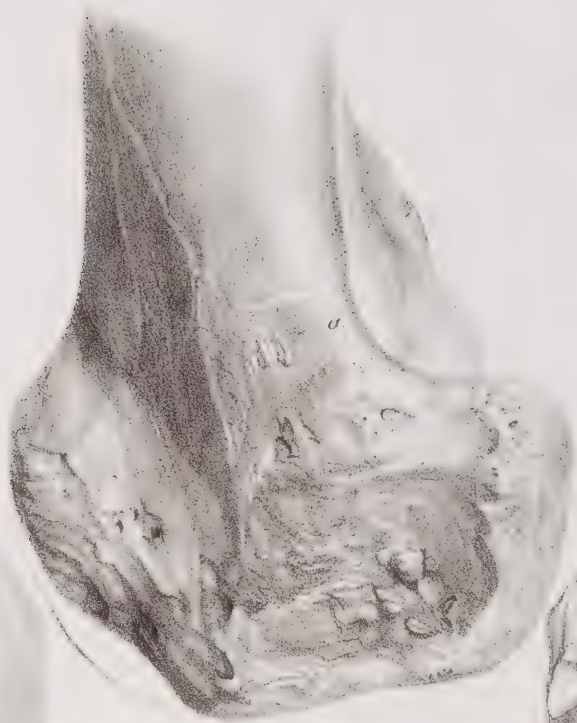
Nat. size

in nat. on stone by J. E. H. E. H.

M & N Hart Hart

EGG OF DINORNIS INGENS

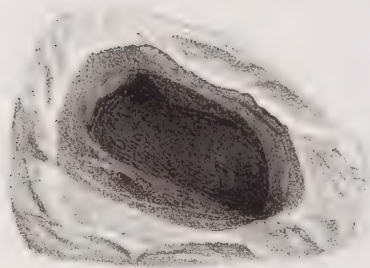
3.



2.



4.



1.



from nat. on stone by J. E. Seebach.

M. N. Herbert imp.



E. A. Smith, del & lith.

W. West, imp.

FIGS. 1-3. ALCA IMPENNIS. FIG. 4. URIA GRYLLE.



E.A. Smith, del. & lith.

W. West, imp.

FIGS. 1-13. ALCA IMPENNIS. FIG. 14. URIA GRYLLE.



$\frac{1}{3}$



$\frac{1}{3}$



Fig:1.

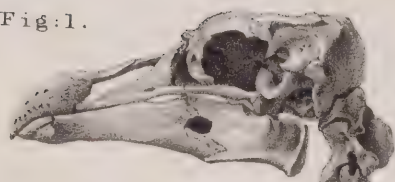


Fig. 2.

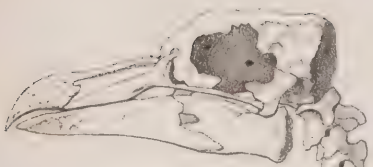


Fig. 3.



C.L. Griesbach.

Mintern Bros. imp.

PEZOPHAPS SOLITARIA.
Fig: 1. Male. 2. Female.

Fig. 1.

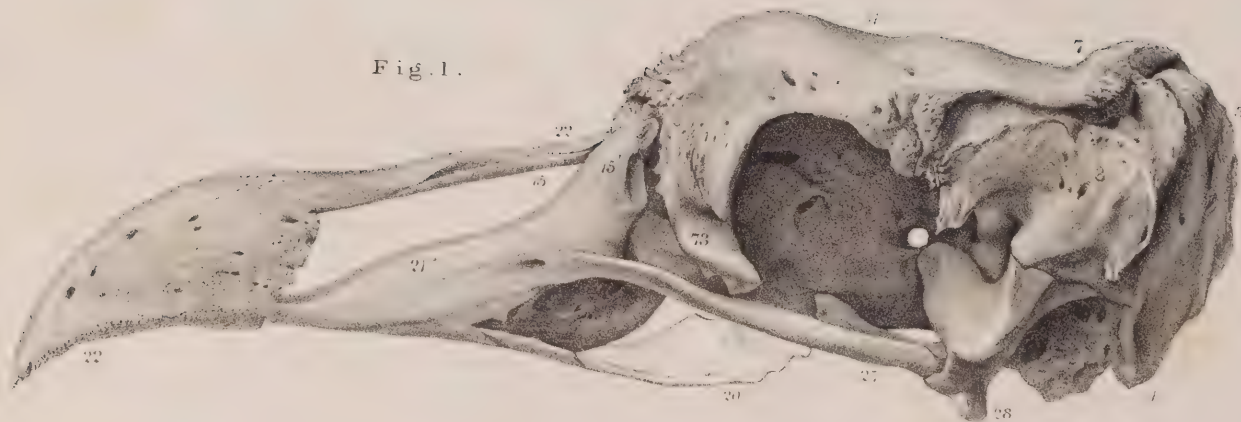


Fig. 2.

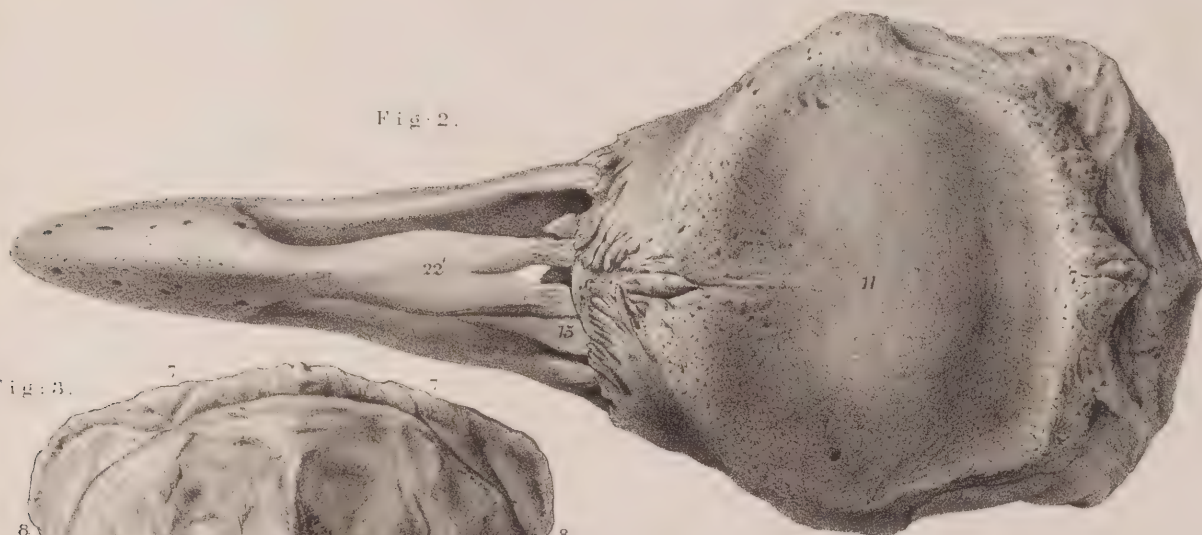


Fig. 3.

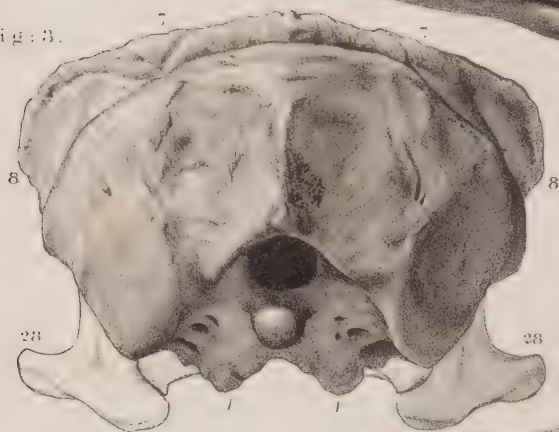


Fig. 4.

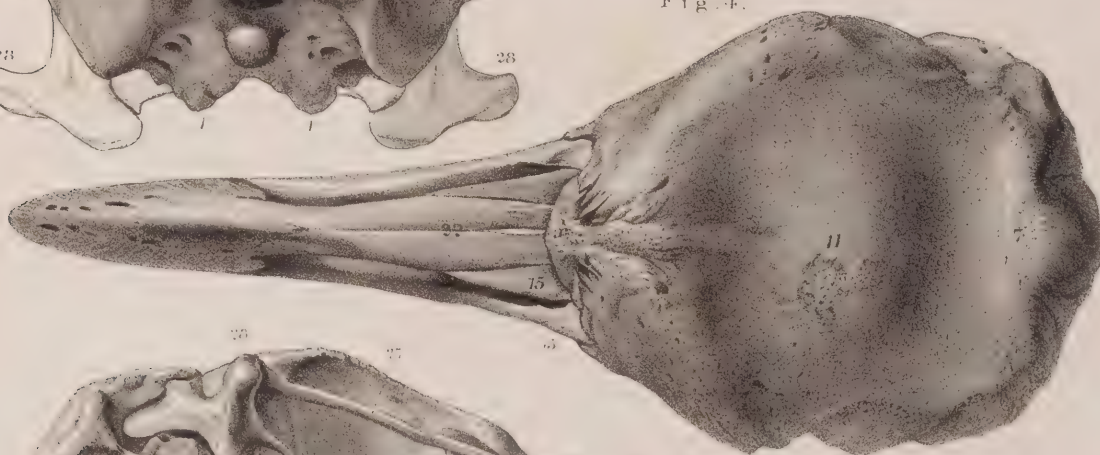


Fig. 5.

